

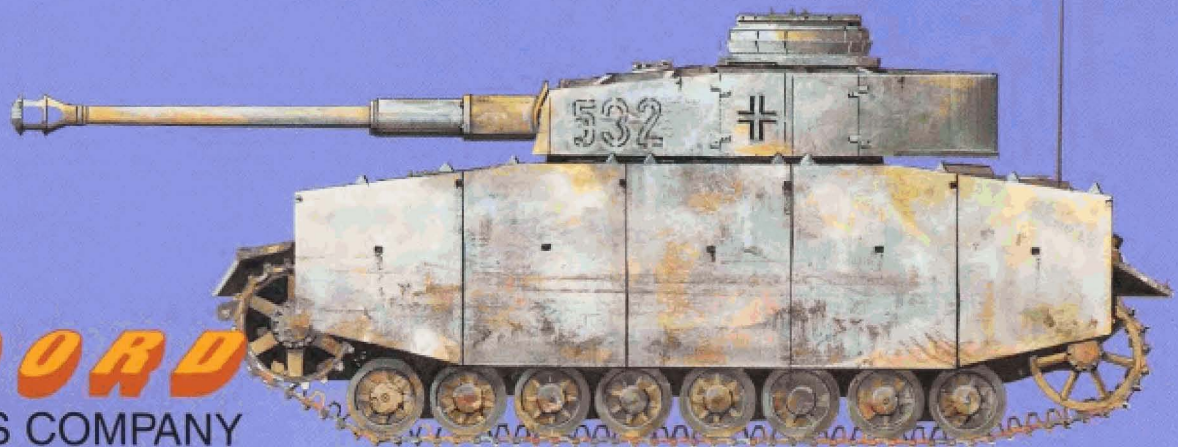
ARMOR AT WAR SERIES

7065

Panzerkampfwagen III and IV

1939-45

Tom Cockle



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Introduction

Panzerkampfwagen III (Sd.Kfz.141)

The Pz.Kpfw.III was the result of two years of design work carried out by various German manufacturing firms competing for contracts to build new tanks for the rearmament of the German Army. By this time, a standard layout had been decided upon with the engine mounted in the rear and the transmission and final drives mounted in the front of the vehicle. The tank was to be manned by five men. The commander was situated centrally in the turret with the gunner on the left and loader on the right. The driver was seated on the left side of the transmission and the radio operator/machine gunner was seated on the right.

The **Pz.Kpfw.III Ausf.A** was the first of the series to go into production in 1937. It featured five large road wheels mounted on a coil spring suspension with two return rollers. The maximum armor thickness was 14.5mm, which at the time was suitable protection against the armor piercing machine gun bullets that it was designed for. A 3.7cm KwK L/46.5 gun was mounted in the fully rotating turret with two coaxial 7.92mm MG34 machine guns. Another MG34 was carried in a ball mount in front of the radio operator. Only ten vehicles were produced.

During the early years, designs changed rapidly to reflect the lessons being learned from field trials. The **Pz.Kpfw.III Ausf.B** featured a radically changed suspension system utilizing eight smaller road wheels mounted in pairs on heavy leaf spring units and had three return rollers. The armor and armament remained unchanged. Minor improvements were made to the hull and turret including a redesigned commander's cupola and improved ventilation for the engine compartment. A swing arm used to mount an MG34 for use against ground attack aircraft was mounted on the left side of the superstructure. Fifteen were produced in 1937.

The **Pz.Kpfw.III Ausf.C** differed from the Ausf.B mainly in the design of the leaf spring suspension and included a redesigned drive sprocket and idler. Fifteen were produced in late 1937 and early 1938.

The **Pz.Kpfw.III Ausf.D** had a slightly modified suspension system with the front and rear leaf spring assemblies mounted at an angle. The louvered engine deck hatches were replaced with solid hatches that could be propped open for ventilation. A new commander's cupola was introduced and became standard on the Pz.Kpfw.III Ausf.D to Ausf.G and on the Pz.Kpfw.IV Ausf.B to Ausf.D. Thirty of these vehicles were produced in early 1938.

A number of changes were introduced with the **Pz.Kpfw.III Ausf.E**, the most notable of which was the introduction of a new torsion bar suspension supporting six road wheels. At the same time, basic armor protection was increased to 30mm on the front and sides of the vehicle. Escape hatches were added to the sides of the hull and a new hull MG ball mount was introduced. The MG34 swing arm was dropped. Some vehicles had an additional side visor installed for the radio operator. Many Pz.Kpfw.III Ausf.E were later rearmored with the 5cm KwK L/42 gun and additional 30mm armor plates on the front and rear of the hull and front of the superstructure were added. Ninety-six vehicles were produced from December 1938 to October 1939.

Initially, the **Pz.Kpfw.III Ausf.F** was externally identical to the Ausf.E. During production, armored brake cooling vents were added on the glacis and a bullet splash strip was mounted on the superstructure roof in front of the turret. Some Ausf.F also had an additional side visor installed for the radio operator. Approximately the last 100 vehicles were produced with the new 5cm KwK L/42 gun in an external mantlet with one coaxial MG34 instead of two as had been installed on previous versions. Many of the earlier production vehicles were later rearmored with the 5cm KwK L/42 gun and additional 30mm armor plates on the front and rear of the hull and front of the superstructure were added. A total of 435 Pz.Kpfw.III Ausf.F were produced from September 1939 to July 1940.

A new, pivoting driver's visor was introduced on the **Pz.Kpfw.III Ausf.G** and the rear armor thickness increased to 30mm on the lower hull. Initially, it was armed with the 3.7cm KwK L/46.5 gun but this was changed to the 5cm KwK L/42 gun after about fifty vehicles had been produced. An exhaust fan was installed on the turret roof, one signal port deleted and an improved commander's cupola introduced midway through production. Some Pz.Kpfw.III Ausf.G were converted for tropical use by cutting holes in the engine deck protected by armored cowls. Also, some very late Ausf.G were fitted with new 40cm wide tracks designed to carry the additional weight added by increased armor thickness. Six hundred vehicles were produced from April 1940 to February 1941.

A new turret with a single rear plate was introduced on the **Pz.Kpfw.III Ausf.H** to provide additional room for the 5cm KwK L/42 main gun along with the addition of 30mm armor plates to the front and rear hull and the front superstructure. To carry the additional weight, new 40cm wide tracks were introduced along with a new six-hole cast drive sprocket, redesigned idler and wider rubber tired road wheels although existing stocks of the eight-hole drive sprocket continued to be used by adding a spacer ring. The front return roller was moved forward to prevent the tracks from slapping the undersides of the fenders. The smoke candle rack on the rear was fitted with an armored cover. Some Pz.Kpfw.III Ausf.H were also converted for tropical use by cutting holes in the engine deck protected by armored cowls. A total of 308 vehicles were produced from October 1940 to April 1941.

Basic armor thickness was increased to 50mm on the front and rear of the hull and superstructure on the **Pz.Kpfw.III Ausf.J**. This necessitated the design of a new driver's visor and hull MG ball mount to fit the 50mm plate. The rear of the engine deck was redesigned with a single 50mm rear plate. The tropical engine deck hatches became a standard fitting, redesigned brake cooling vents and one-piece hatches replaced the two-piece hatches on the glacis and the hull side plates were extended on the front and drilled out for towing. The smoke candle rack was relocated under the rear engine deck overhang for additional protection.

In December 1941, the **Pz.Kpfw.III Ausf.J** began to be fitted with the 5cm KwK39 L/60 gun and was designated Sd.Kfz.141/I to differentiate it from the L/42 armed versions. At some point during production, the engine deck hatches were changed to one-piece and hinged at the front. As a result, the ventilation covers were reoriented from a side to side configuration to a front to back configuration. The rear radiator fan access hatches also had similarly designed ventilation covers added to replace the simpler covers previously used. Many Pz.Kpfw.III Ausf.J of both types were later fitted with 20mm armor plates on the front of the turret and superstructure that were introduced on the Pz.Kpfw.III Ausf.L. A total of 1,549 were produced from March to December 1941 armed with the L/42 gun with another 1,067 armed with the L/60 gun from December 1941 to July 1942.

Spaced 20mm armor plates were added to the front of the mantlet and superstructure on the **Pz.Kpfw.III Ausf.L** although some were produced without the plates on the mantlet due to shortages. Changes introduced during production were deleting the side hull escape hatches and the turret side visors and loaders front visor on the mantlet. Armor protection on the front of the turret was increased from 30mm to 57mm. There were 653 produced from June to December 1942.

The **Pz.Kpfw.III Ausf.M** featured a new deep wading exhaust system that included hinged doors under the engine deck overhang and adjustable covers on the air intake grilles on the side of the engine deck and seals on all other openings. The smoke candles were relocated and mounted in two banks of three fastened to each side of the turret. Two Bosch headlights were mounted on the fenders in place of the two lights previously mounted on the glacis and the access hatches on the glacis were no longer hinged. Some vehicles were backfitted with turret and hull Schürzen as protection against Russian anti-tank rifles. Due to its armament, by early 1943, the

Pz.Kpfw.III had outlived its usefulness as a battle tank and 165 Ausf.M were ordered to be completed as StuG.III. A further 100 were completed as Flammpanzer and the rest were completed as Ausf.N. As a result, only 250 Ausf.M were produced.

In June 1942, it was decided to mount the more versatile KwK L/24 gun on the Pz.Kpfw.III which fired more effective high explosive and armor piercing rounds than the 5cm KwK39 L/60 gun. There were 450 **Pz.Kpfw.III Ausf.N** produced by converting 3 Pz.Kpfw.III Ausf.J chassis and 447 Pz.Kpfw.III Ausf.L chassis with a further 213 completed on diverted Ausf.M production plus 37 converted on overhauled Pz.Kpfw.III. Modifications included mounting a redesigned cupola with a one-piece hatch and mounting hull and turret Schürzen.

Several types of special purpose vehicles were constructed on converted Pz.Kpfw.III chassis.

The **Pz.Bef.Wg.III Ausf.D1** (Panzerbefehlswagen, or armored command vehicle) was constructed on a modified Pz.Kpfw.III Ausf.D hull and featured the driver's visor and hull MG ball mount from Pz.Kpfw.III Ausf.E production but with a pistol port in place of the MG34. To make space for the extra radio equipment, the main armament was replaced with a dummy gun mounted on the mantlet and for protection, an MG34 was mounted in a ball mount on the right side of the mantlet. The turret ring was cut out and the turret bolted in place. A prominent frame antenna was mounted on the engine deck and an 8m winch mast could be extended through a hatch in the turret roof. An additional radio antenna was mounted on the left side of the hull and pivoted forward into a wooden trough. Only 30 vehicles were produced from June 1938 to March 1939.

The **Pz.Bef.Wg.III Ausf.E** was constructed on the chassis of the Pz.Kpfw.III Ausf.E. Like the Ausf.D1, a dummy gun replaced the main armament and the turret was bolted in place closer to the front. It was also fitted with a frame antenna, winch mast and additional antenna on the left side. A simple flap visor was fitted to front plate for the driver but the standard driver's visor and later pivoting visor were also used. There were 45 produced from July 1939 to February 1940.

Similarly, the **Pz.Bef.Wg.III Ausf.H** was produced on chassis of the Pz.Kpfw.III Ausf.H. Early vehicles had a dummy 3.7cm gun but later vehicles had a dummy 5cm gun, both mounted to an internal mantlet like the Ausf.E. They utilized the new 40cm tracks and wider road wheels but retained the earlier eight-hole drive sprocket with spacer rings and early idler. A simple pistol port replaced the hull MG ball mount. The radio antenna arrangement was not changed. A total of 175 vehicles were produced from November 1940 to January 1942.

In January 1943, it was decided to produce all command vehicles from converted standard production Pz.Kpfw.III Ausf.J by simply removing an ammunition rack and adding the extra radio equipment in its place, replacing the hull MG with a pistol port and adding a periscope in the turret roof. The prominent frame antenna was replaced by a star antenna mounted on a porcelain base protected by a small cylindrical armored pot welded to the engine deck. It was referred to as the **Pz.Bef.Wg. mit 5cm KwK L/42** and a total of 185 were produced from August 1942 to September 1943.

The **Pz.Bef.Wg.III Ausf.K** was produced on the chassis of the Pz.Kpfw.III Ausf.M. A larger turret taken from Pz.Kpfw.IV Ausf.F or Ausf.G production was installed and a shortened mantlet with a 5cm KwK39 L/60 gun was fitted. A pivoting visor similar to the driver's visor was mounted in the front of the turret to the right side of the gun. Many were also fitted with Pz.Kpfw.III style turret and hull Schürzen. Only 50 vehicles were produced from December 1942 to February 1943.

The **Pz.Beob.Wg.III** (Panzerbeobachtungswagen, or armored observation vehicle), was constructed on the chassis of converted Pz.Kpfw.III Ausf.E to H. Additional 30mm armor plates were fitted to those converted from Ausf.E to G and the hull MG mount was replaced by a pistol port plug. A thicker mantlet with a dummy gun offset to the right side and an MG ball

mount located near the center was mounted to the front of the turret. A large retractable periscope was fitted to the right side of the turret roof. There were 262 vehicles converted between February 1943 and April 1944.

After the defeat of France in May 1940, a deep wading submersion system was developed for the Pz.Kpfw.III for the anticipated invasion of England. All air intakes were fitted with watertight covers and joints were sealed with rubber gaskets. Air was supplied to the submerged vehicle by a long flexible tube called a snorkel that had a float on the end to keep it above the surface of the water. When it was realized that the invasion would not take place, most of the **Tauchpanzer III** were modified to allow them to cross rivers using a snorkel fixed to the cupola. A total of 168 Pz.Kpfw.III Ausf.G and H were converted to Tauchpanzer from July to October 1940.

The **Pz.Kpfw.III (Fl)**, or **Flammpanzer III**, was produced by mounting a flame-thrower in place of the 5cm KwK39 L/60 gun. One hundred vehicles were converted between February and April 1943.

Panzerkampfwagen IV (Sd.Kfz.161)

In 1934, three German manufacturing firms were asked to submit designs for a close support tank in the 20 ton class with a contract to produce vehicles being awarded to Krupp in 1935. Deceptively called the 'Begleitwagen', or escort tank, 5 different suspensions were tested before the final design with four pairs of road wheels with leaf springs was accepted.

Krupp was awarded a contract to produce 35 **Pz.Kpfw.IV Ausf.A** in December 1936. The superstructure was wider than subsequent designs and was stepped back in front of the radio operator. Like the Pz.Kpfw.III, maximum armor thickness was 14.5mm. A split hatch opening fore and aft was installed in the superstructure roof for both the driver and radio operator. Armament consisted of a 7.5cm KwK37 L/24 gun with a coaxial MG34 and an MG34 mounted in a ball mount in front of the radio operator. A drum shaped cupola with eight vision ports was provided for the commander and a swing arm used to mount an MG34 for use against ground attack aircraft, was mounted on the left side of the superstructure. The first vehicles were delivered in November 1937 and production ceased in March 1938.

The **Pz.Kpfw.IV Ausf.B** featured a narrower superstructure than Ausf.A with a straight front plate. Armor thickness was increased to 30mm on the front of the turret, hull and superstructure and a redesigned internal gun mantlet was introduced. The hull MG ball mount was replaced with a visor and pistol port and one-piece driver's and radio operator's hatch replaced the two-piece hatches. The driver's visor and commander's cupola were the same as the ones introduced on the Pz.Kpfw.III Ausf.E. Narrow rubber-tired return rollers were also introduced and the MG swing arm was dropped. Forty-two vehicles were produced from April to September 1938.

The **Pz.Kpfw.IV Ausf.C** was externally almost identical to the Ausf.B. Minor differences can be seen in the shape of the opening for the 7.5cm gun in the mantlet and a long armored sleeve for the coaxial MG34 was added. The round engine deck locks were replaced with the rectangular style that would continue to be used throughout the rest of Pz.Kpfw.IV production. There were 134 vehicles produced from September 1938 to August 1939.

The stepped front plate was reintroduced on the **Pz.Kpfw.IV Ausf.D** along with an improved MG34 ball mount the same as used on the Pz.Kpfw.III Ausf.E and a new 35mm thick external mantlet was added. The ventilator grilles on the sides of the engine deck were redesigned. Five bumpers were installed on each side and the height of the guide tooth on the turret was increased. Starting in July 1940, additional 30mm armor plates were added to the hull and superstructure front and 20mm plates added to the hull and superstructure sides. About 30 vehicles were converted for employment in North Africa by adding armored grilles to the engine deck hatches. A total of 231 vehicles were produced from October 1939 to March 1941.

Improvements made to the **Pz.Kpfw.IV Ausf.E** include increasing

thickness of the front hull to 50mm, adding the 30mm armor plates to the front of the superstructure and 20mm plates to the sides of the hull and superstructure, although some vehicles left the factory without them due to shortages. The pivoting driver's visor from the **Pz.Kpfw.III Ausf.G** was fitted to the 30mm thick front plate. A new cast drive sprocket was introduced along with redesigned road wheel hubcaps. The turret was redesigned to remove the bulge below the cupola and a new reinforced cupola, the same as the one introduced on the late **Pz.Kpfw.III Ausf.G**, was added along with a powered ventilator. Some vehicles were converted for employment in North Africa by adding ventilated engine deck hatches. An armored cover was installed around the smoke candle rack now mounted on the rear plate instead of the muffler as was previously done. There were 206 vehicles produced from September 1940 to April 1941.

Starting with the **Pz.Kpfw.IV Ausf.F**, the front superstructure plate was increased in thickness to 50mm and reverted back to a straight plate. At the same time, the front of the turret was also increased to 50mm thick, and the sides of the hull and superstructure to 30mm, eliminating the extra plate that had been fitted to the **Ausf.E**. A new pivoting driver's visor designed for the **StuG.III** was mounted in the 50mm thick front plate. The turret was redesigned to accept the split side hatches used on the **Pz.Kpfw.III**. To carry the additional weight, new 40cm tracks were introduced along with a redesigned drive sprocket and welded tubular steel idler and wider rubber tired road wheels. The muffler was shortened and a new turret traverse motor muffler designed. With the elimination of the long turret traverse motor muffler that was used on the **Ausf.A** to **Ausf.D**, the smoke candle rack was now mounted directly to the rear plate and move to the left side. Some vehicles were also fitted with tropical engine deck hatches. There were 470 vehicles produced from April 1941 to March 1942.

The **Pz.Kpfw.IV Ausf.G** was basically identical to the **Ausf.F** except that a new 7.5cm KwK40 L/43 gun was installed in place of the KwK L/24 gun with some internal modifications to the ammunition racks to accommodate the longer ammunition. At first, it was called the **Pz.Kpfw.IV Ausf.F2**, which was characterized by the single baffle globe shaped muzzle brake, but the name was officially changed on 1 July 1942. Several modifications occurred during the production run including removing the visors from both sides and the right front of the turret, adding a spare road wheel storage bin on the left fender, adding spare track brackets on the glacis, adding 30mm armor plates to the front of the hull and superstructure, at first to some and then to all vehicles, and adding ventilated engine deck hatches. The distinctive shaped muzzle brake was changed to a double baffle type. Later in production, two Bosch headlights replaced the single Notek blackout driving lamp, smoke candle dischargers were added to both sides of the turret (dropped in May 1943), the driver's periscope was deleted, two cylindrical engine air cleaners were installed on the right fender (dropped in February 1944) and the radio antenna was moved to a fixed position on the left rear corner of the engine deck. Beginning in February 1943, the commander's cupola was replaced with a reinforced one with a one-piece hatch and in late March 1943, the L/43 gun was replaced by the L/48 gun. By this time, thin armor plates called Schürzen began to be installed around the turret and on both sides of the hull as protection against Russian anti-tank rifles. At the beginning of 1944, vehicles returned for repair received Zimmerit anti-magnetic mine coating. A total of 1,930 vehicles were produced from March 1942 to June 1943.

The turret roof thickness had remained unchanged at 10mm from the beginning of **Pz.Kpfw.IV** production. Starting with the **Pz.Kpfw.IV Ausf.H**, the sloped front roof plate was increased to 16mm and the rear roof plate to 25mm thick. The final drives were also reinforced and as a result, the curved armor cover seen on the **Pz.Kpfw.IV Ausf.A-G** was dropped. A new open spoke cast drive sprocket was introduced however, some early **Pz.Kpfw.IV Ausf.H** were still produced with the earlier final drives and sprockets. During production, a single 80mm was introduced for the front hull and superstructure, replacing the 50mm plus 30mm plates used on the later **Ausf.G**. The introduction of turret and hull Schürzen made the driver's and radio operator's side visors redundant and they were dropped. Zimmerit began to be applied in the factories starting in September 1943 as were welded bump stops and forged hub caps for the road wheels. Steel

return rollers and a new cast steel idler were introduced although it never totally replaced the welded tubular idler. In late 1943, the glacis and hull side plates were interlocked for additional strength. Early **Pz.Kpfw.IV Ausf.H** were also fitted with the two cylindrical air cleaners on the right fender and these were dropped from production in early 1944. Between May 1943 and February 1944, 2,322 **Pz.Kpfw.IV Ausf.H** were produced.

The final version in the series was the **Pz.Kpfw.IV Ausf.J**. The majority of changes introduced during production of the **Ausf.J** were the result of cost saving measures rather than improvements to the design. These included eliminating the turret traverse motor to make room for an additional fuel tank, dropping the visors and pistol ports in the turret side hatches, installing a simplified square cover on the engine deck hatch for the radiator, replacing the horizontal engine muffler with two vertical flame suppressing tubes, eliminating the application of Zimmerit, changing to Schürzen made from heavy wire mesh for the hull, reducing the number of return rollers on each side to three and replacing the cast steel front and rear tow points with hull extensions with holes drilled in them. Improvements include installing three Pilze sockets on the turret roof for a jib hoist, increasing the superstructure roof from 11mm to 16mm thick, installing a larger armored cover over the turret roof ventilator, changing the cupola lid to a pivoting one and adding a welded tow coupling for use with tow bars instead of cables. The **Pz.Kpfw.IV Ausf.J** was the most numerically produced **Pz.Kpfw.IV** at 3,150 vehicles from February 1944 to April 1945.

Along with the **Tauchpanzer III**, several **Pz.Kpfw.IV Ausf.D** and **Ausf.E** were converted to **Tauchpanzer IV**. Most were issued to **Pz.Rgt.18** of the **18.Panzer-Division** and **Pz.Rgt.6** of the **3.Panzer-Division** in 1940 and the **Pz.Kpfw.IV Ausf.E** converted to **Tauchpanzer** were issued to **Pz.Rgt.35** of the **4.Panzer-Division** in 1941.

As **Pz.Kpfw.III** production was switched to the manufacture of the **StuG.III**, the number of **Pz.Bef.Wg.III** was reduced and it became necessary in early 1944 to provide command vehicles based on the **Pz.Kpfw.IV** chassis. The **Pz.Bef.Wg.IV** was fitted with additional radio equipment and an extendable periscope in the turret roof. An additional 2m rod antenna was mounted on the turret roof and an armored housing was welded to the rear plate protected the mount for the star antenna. Approximately 88 were constructed on refurbished **Pz.Kpfw.IV** chassis from March to July 1944 with another 17 produced on new **Pz.Kpfw.IV Ausf.J** chassis in August and September 1944.

Externally, the **Pz.Beob.Wg.IV** was identical to the **Pz.Bef.Wg.IV** except that it was fitted with a cupola taken from the **StuG.III Ausf.G**. About 124 vehicles were produced from July 1944 to March 1945.

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Panzerkampfwagen III (Sd.Kfz.141)



A Pz.Kpfw.III Ausf.A negotiates a water filled ditch during a training exercise during the pre-War years. The five large road wheels utilized a coil spring suspension and the maximum armor thickness was 15mm. Only ten vehicles were produced in 1937, seeing action in Poland in 1939 before being withdrawn from service in early 1940.



This photo of a Pz.Kpfw.III Ausf.C provides a good view of the eight wheel leaf spring suspension system. Note the egg shaped holes in the drive sprocket and the high guide teeth on the Kgs.6109/380/120 tracks. Also visible on the side of the hull is the swing arm used to mount an MG34 for use against ground attack aircraft by a crewman that was installed on the Pz.Kpfw.III Ausf. B-D.



The Pz.Kpfw.III Ausf.C utilized an eight wheel suspension system with leaf springs similar to the Ausf.B and Ausf.D. This vehicle can be identified as an Ausf.C from the type of drive sprocket and the location of the front shock absorber which can be seen just below and behind the forward return roller. It was also lightly armored but did see combat in Poland. A total of 15 vehicles were produced in 1937 and early 1938 and were withdrawn from service in 1940.

Two Pz.Kpfw.III Ausf.D and a Pz.Kpfw.III Ausf.E seen during a parade somewhere in Germany in the pre-War years. The eight wheel suspension and leaf springs employed on the Pz.Kpfw.III Ausf.B-D can be clearly seen here. The front and rear shock absorbers were relocated to the front and rear of the first and last return rollers. A total of 30 vehicles were produced from January to June 1938, and after seeing action in Poland in 1939, it was also withdrawn from service in February 1940. A temporary reprieve was granted in April 1940, when several were issued to Pz.Abt.z.b.V.40 and sent to Norway.





A Pz.Kpfw.III Ausf.E seen early in the Polish campaign, boldly marked with a large white Balkenkreuz on the front plate. The chassis number '60408' can be faintly seen on the front glacis plate making this the eighth Ausf.E produced. A hit on the front of the turret has torn away the right side of the external gun mantlet and made a small penetration hole in the 30mm armor plate. There were 96 Pz.Kpfw.III Ausf.E produced from December 1938 to October 1939.



Another Pz.Kpfw.III Ausf.E rolls through a war torn Polish town in 1939. The crew of this vehicle has prudently obscured the white Balkenkreuz with mud to make it less visible to Polish anti-tank gunners. A white outline cross can also be seen in the center of the glacis plate. There were 98 Pz.Kpfw.III Ausf.E in the German Army inventory at the beginning of the Polish campaign.



This battered Pz.Kpfw.III Ausf.E or F is being transported to a repair depot on an Sd.Ah.116 trailer after the battle of France in 1940. Due to overlapping production schedules and the presence or absence of certain external features, it is often impossible to accurately determine the specific model, or Ausführung of the vehicle. In such cases, the chassis number is the only accurate way to tell. This vehicle displays features common with some Ausf.E and F such as the radio operator's visor, but lacks the splash strip in front of the turret and the armored vents for brake cooling on the glacis that were introduced during Ausf.F production. After the Polish campaign, the German Army adopted a less conspicuous, smaller black Balkenkreuz with a white outline to mark their armored vehicles. It is most likely painted in the two color camouflage scheme of 2/3 dunkelgrau Nr.46 and 1/3 dunkelbraun Nr.45 ordered for armored vehicles on 7 November 1938, largely obscured by a heavy coat of dust.



A column of Pz.Kpfw.III Ausf.E or F from 2.Panzer-Division advance down a French road past a line of soft-skin support vehicles. The two yellow dots that were the tactical sign of 2.Panzer-Division can be seen painted on the rear plate. Armored vehicles in this division often had a white rhomboid painted on the front and back of the hull followed by a number representing the company in which the vehicle was assigned. Here, this marking appears to have been painted over.

A new Pz.Kpfw.III Ausf.E or F is being inspected by a squad of German foot soldiers. Like the earlier Panzer III's, it was armed with a 3.7cm KwK L/46.5 gun with two coaxial MG34 machine guns and one MG34 in a ball mount in front of the radio operator's seat. A new six wheel torsion bar suspension was introduced on this variant which remained unchanged throughout production.



A heavily damaged Pz.Kpfw.III Ausf.E or F lies abandoned along a country road in 1941. Note that the second road wheel is one with the 95mm wide rubber tire which replaced the early 75mm wide tire late in the production of the Pz.Kpfw.III Ausf.G. The Balkenkreuz on the side of the hull is painted in a white outline only and a faint tactical number '332' can be seen on the side of the turret. The raised periscope cover seen on the turret roof was fitted on the Ausf.E and some Ausf. F and very early Ausf.G were not fitted with the turret splash strip or the armored brake cooling vents.

Two Pz.Kpfw.III Ausf.E or F from II/Pz.Rgt.1 of 1.Panzer-Division at rest during the march through France in May 1940. The tactical numbers are painted in white and the white bar below denotes the II.Bataillon. On 10 May 1940, Pz.Rgt.1 was equipped 28 Panzer III.





A Pz.Kpfw.III Ausf.E or F from Pz.Rgt.3 of 2.Panzer-Division during the advance through the Balkans in April 1941. Note the radio operator's visor on the right side of the hull and the raised periscope cover on the turret roof. During this time, this division employed a system of marking their vehicle with small geometric shapes on the side of the turret, the meaning of which is not clear. The tactical number '513' is painted on a small rhomboid plate which would also have been seen on the left fender and rear hull.



This Pz.Kpfw.III Ausf.E or F also has a bundle of fascines strapped to the engine deck. Note the lack of a raised periscope cover on the turret roof.



A Pz.Kpfw.III Ausf.E or F sits in a field while its crew relaxes from the rigors of battle. They have cut a bundle of small trees to act as fascines and stored them across the back of the engine deck to be readily available if needed. A smoke candle rack is mounted on the rear of the hull and was operated from inside the vehicle by a mechanism connected to the rack by means of a steel cable. Only two of the five smoke candles remain.

Another Pz.Kpfw.III Ausf.E or F with the flush signal port on the left side of the turret roof but without the splash strip in front of the turret and the armored vents for brake cooling on the glacis. The white tactical number on the side of the turret followed by a white dot indicates it is from II./Pz.Rgt.2 of 1.Panzer-Division.



This Pz.Kpfw.III Ausf.E or F has the flush signal port on the turret roof and is not fitted with the turret splash and armored brake cooling vents. The circle on the side of the turret indicates it is from Pz.Rgt.3 of 2.Panzer-Division, which used a series of geometric shapes to identify its vehicles during the campaign in the Balkans.

Another Pz.Kpfw.III Ausf.E or F from 2.Panzer-Division during the advance through the Balkans in April 1941. The division was equipped with 27 Pz.Kpfw.III (3.7cm) and 45 Pz.Kpfw.III (5cm) at the beginning of the campaign.



A Pz.Kpfw.III Ausf.E or F waits for traffic to begin moving along a country road. It is fitted with the raised periscope cover on the left side of the cupola. The tactical number 523 is painted on a rhomboid shaped metal plate on the rear hull. Both the Ausf.E and Ausf.F were fitted with a cover plate over the engine crank starter port on the rear plate that was hinged on the bottom. A Büssing-NAG Type G31 lorry can be seen behind the Panzer II.



This Pz.Kpfw.III Ausf.F is from II./Pz.Rgt.2 of 1.Panzer-Division as indicated by the white tactical number followed by the white dot. It is fitted with the armored vents for brake cooling on the glacis. The Pz.Kpfw.III Ausf.E, F and G were fitted with Kgs.6111/380/120 track links that were 36cm wide and measured 38cm overall including the track pin. Continual contact with the ground had polished the face of the track links to a bright metallic finish.

A Pz.Kpfw.III Ausf.F crosses an engineer's bridge over a small stream. Although it does not appear to have been fitted with the armored vents for brake cooling on the glacis, it has been fitted with the turret splash guard, the end of which can be seen to the left of the tarp.



This Pz.Kpfw.III Ausf.F has been fitted with the turret splash guard bolted to the superstructure roof above the driver's and radio operator's positions. The white outline tactical number '800', indicates that this is the company commander's vehicle.



A Pz.Kpfw.III Ausf.F raises a cloud of dust as it travels down a country road in the Balkans. The armored brake cooling vents can be seen on the glacis. All but the last 21 Ausf.F were fitted with the 3.7cm KwK L/46.5 gun when production switched over to the 5cm KwK L/42 gun in an improved external mantlet.

A new Pz.Kpfw.III Ausf.F featuring the turret splash strip, raised periscope cover on the turret roof, radio operator's visor and 95mm wide rubber tired road wheels but missing the armored brake cooling vents on the glacis. Unusually, the tactical number '121' is painted on a rectangular instead of a rhomboid shaped metal plate.



This Pz.Kpfw.III Ausf.F displays some of the features found on most production vehicles including the turret splash strip, armored brake cooling vents and flat signal port cover on the left side of the turret roof. The tactical sign of 2.Panzer-Division that was used during Operation 'Barbarossa', an inverted 'Y' with a vertical line beside it, can be seen to the right of the driver's visor.



This Pz.Kpfw.III Ausf.F from 2.Panzer-Division has been rearmed with a 5cm KwK L/42 gun and upgraded with additional 30mm armor plates bolted to the lower hull on the front and rear and welded to the front superstructure plate. Due to the increased weight, the suspension was modified by the addition of 95mm wide rubber tired road wheels to replace the earlier 75mm wide tires and new 40 cm Kgs.61/400/120 tracks were fitted. Note the two types of track links. The ones stowed on the front have been redesigned with a slot on the outside edge to attach an ice sprag. Spacer rings were added to the drive sprocket and idler to accommodate the new tracks. The earlier cupola has been retained.



Another modified Pz.Kpfw.III Ausf.F. The additional 30mm armor plates bolted to the glacis are evident as are the cutouts in the 30mm plate for the driver's visor and periscope. The Notek light has been relocated to the left fender and two spare road wheels mounted. It is also fitted with the early cupola.



A row of Pz.Kpfw.III Ausf.F and G from 18.Panzer-Division converted to Tauchpanzer sit in a field in Russia. The closest one to the camera has a white tactical number '516' while the second one has '233' which may be an indication that these are captured vehicles. The tactical emblem for the division, a 'Y' with three horizontal strokes through the tail painted in yellow, can be seen just in front of the tactical numbers. The division was organized into three Abteilung each with three Kompanie for Operation Barbarossa and was equipped with 99 Pz.Kpfw.III armed with the 3.7cm gun.

Modifications made to this Pz.Kpfw.III Ausf.F also include adding a ventilator in the turret roof along with the 5cm KwK L/42 gun although the early cupola is still retained. In addition to upgrading the road wheels, tracks and drive sprockets, the front return roller has been repositioned forward to prevent the tracks from hitting the shock absorber.



This Pz.Kpfw.III Ausf.F can be identified by the bottom hinged starter crank port on the rear plate. It has been rearmed with the 5cm KwK L/42 gun and fitted with the newer cupola, road wheels and tracks, but it is impossible to tell from this view if any other upgrades have been made.



This early Pz.Kpfw. III Ausf. G was converted to a Tauchpanzer in mid-1940 for the proposed invasion of England. After the cancellation of the invasion, they were issued to a few Panzer Divisions, like this one from 1./Pz. Rgt. 18 of the 18. Panzer-Division. The early 3.7cm KwK L/46 gun is still fitted to the vehicle along with the early cupola and 38cm Kgs. 6111/380/120 track links although the front return roller has been repositioned. The hinged water-tight door over the air intake on the side of the engine deck can be seen to good advantage. The tactical number painted on the side of the turret is '1100' which may indicate it is a command vehicle.

The bolt strip for attaching the waterproof covers around the 5cm gun can be clearly seen in this photo as can the strip around the hull MG mount on this early Pz.Kpfw. III Ausf. G converted to Tauchpanzer. A new cupola has been fitted



The deep wading exhaust fitted to this Pz.Kpfw.III Ausf.F or G converted to a Tauchpanzer can be seen in this rear view. A total of 168 Pz.Kpfw.III Ausf.F, G and H were converted to Tauchpanzer from July to October 1940.



This early Pz.Kpfw.III Ausf.G has had the barrel of its 3.7cm gun shot off during an engagement in Russia. It is still fitted with the early cupola, 75mm wide rubber tired road wheels and 38cm tracks. An improved pivoting driver's visor, the Fahrersehklappe 30 was introduced on the Ausf.G. A white tactical sign for a Panzer-Division is painted on the left mudguard followed by the number '3' indicating the company to which the vehicle was assigned.

This early Pz.Kpfw.III Ausf.G is identified by the turret and ventilator and lack of a rain guard over the driver's visor, and although it is still fitted with the early cupola, 75mm wide rubber tired road wheels and 38cm tracks, it has been rearmed with the 5cm KwK L/42 gun.





This Pz.Kpfw.III Ausf.G from 2.Panzer-Division has fallen through a wooden bridge somewhere in the Balkans in spite of having two good luck horseshoes attached to the turret, and is being towed out by two Sd.Kfz.9 half-track prime movers. It is fitted with a new cupola, turret ventilator and 95mm wide rubber-tired road wheels but still has the early 38cm tracks. The front return roller has been relocated forward.



This early Pz.Kpfw.III Ausf.G converted to a Tauchpanzer is missing its 3.7cm gun barrel, leaving the armored barrel sleeve completely open. The white painted on its right fender indicates it belongs to one of the Panzer-Divisions assigned to Panzer-Gruppe 2 commanded by Generaloberst Heinz Guderian in this case, 18.Panzer-Division. (Photo courtesy of John Prigent)



A later Pz.Kpfw.III Ausf.G converted to a Tauchpanzer that has been fitted with the 5cm KwK L/42 gun. The function of the steel strap attached to the front side of the turret by the lifting hook bolts is unknown. (Photo courtesy of John Prigent)



A Pz.Kpfw.III Ausf.G identified by the top hinged starter crank port cover and early cupola, rolls past a battery of 10.5cm leFH18 guns. The vehicle has also been fitted with a stowage bin on the rear of the turret and a smoke candle rack on the rear plate of the superstructure.



A winter whitewashed Pz.Kpfw.III Ausf.G pushes through a heavily forested area in northern Russia. Unusually, it has been fitted with a turret stowage bin from a Pz.Kpfw.IV.

High ranking German officers and civilians accompanied by a German military band watch as a Pz.Kpfw.III Ausf.H rolls by during a parade. Additional 30mm face hardened armor plates were welded to the front of the superstructure and bolted to the lower hull to improve armor protection.





A mixed column of Pz.Kpfw.III's has halted along a small stream and the crews are taking a short break. The vehicle on the left is a Pz.Kpfw.III Ausf.H and is fitted with the new idler wheel. Although not clearly evident here, the turret design has been modified to incorporate a single piece rear plate.



The crewmen of two Pz.Kpfw.III Ausf.H and a Pz.Kpfw.II from 2.Panzer-Division wash their dusty Panzers in a seaside town in the Balkans. The single rear plate of the new turret design can be seen here. After the campaign was over, the crews of this unit painted large playing card emblems on the sides and back of their tank turrets, like this white spade inside a white circle. An oversized white outline Balkenkreuz is also painted on the rear of the turret and the tactical number '121' is painted on the side of the hull behind the standard cross.



This view of a Pz.Kpfw.III Ausf.H provides a look at how the additional 30mm face hardened armor plate on the front of the superstructure was higher than the roof above the driver and radio operator. The new cupola can also be seen to good effect as well.



Judging by the way these Pz.Kpfw.III's are jammed together, they are probably in a Soviet vehicle dump. This Pz.Kpfw.III Ausf.H still has the early eight-hole drive sprocket with spacing rings for the 40cm tracks but has been fitted with the new welded idler and improved shock absorbers. In addition, it has the 20mm spaced armor plates that were introduced during the production of the Pz.Kpfw.III Ausf.L and been fitted to some Ausf.H and J. It appears that this vehicle has been painted in overall dark yellow and has an unusual black Balkenkreuz without a white outline.

This Pz.Kpfw.III Ausf.H from 5.Panzer-Division retains the early eight-hole drive sprocket and an early idler and is fitted with a redesigned small discharger rack protected by an armor housing. An unusual spare road wheel rack has been mounted on the rear of the engine deck and a more detailed photo of this arrangement can be seen on page 100 of 'Germany's Panzer in World War II' by Tom Jentz and Hilary Doyle.



The Pz.Kpfw.III Ausf.J featured short extensions of the hull side plates that were drilled for towing in place of the earlier cast tow pintles. A new cast drive sprocket was introduced on the Ausf.H and continued to be used until the end of the war. The 5cm KwK L/42 gun continued to be used until appearance of the long barrel 5cm KwK L/60 gun in early 1942. This vehicle has obviously seen some action as one segment of the cupola visors has been shot away.



On the Pz.Kpfw.III Ausf.J, a single 50mm thick armor plate replaced the two 30mm plates used on the Pz.Kpfw.III Ausf.H on the front of the superstructure and lower hull. The thickness of the mantlet was increased from 35mm to 50mm as well while the front of the turret remained at 30mm. An improved driver's visor, the Fahrersehklappe 50 to fit the new 50mm front plate was also installed.



A column of Pz.Kpfw.III Ausf.J from 9./Pz.Rgt.24 of the 24.Panzer-Division on their way to meet their destiny in Stalingrad during the summer of 1942. The engine deck was redesigned on the Ausf.J and the two-piece tail plate with the bolted flanges was replaced with single 50mm plates. During production of the Ausf.H, a sheet metal deflector was added to deflect the cooling air being discharged from the engine compartment away from the ground to prevent raising clouds of dust. The division was also organized into three Abteilung each with three Kompanie at this time.

Another Pz.Kpfw.III Ausf.J from Pz.Rgt.24 of the 24.Panzer-Division. The large stowage box on the rear of the engine deck was a fitting peculiar to this division.



A Pz.Kpfw.III Ausf.J and a Pz.Kpfw.IV Ausf.F sit in a snow covered field in Russia during the winter of 1942-43. The short barrel 5cm KwK L/42 gun had proved to be inadequate against the Russian T-34 and KV tanks and would soon be replaced with the 5cm KwK L/60 gun.



A Pz.Kpfw.III Ausf.J from Pz.Rgt.31 of the 5.Panzer-Division rolls down a dirt track in Russia in the summer of 1942. Track links carried on the front of the vehicle provided a small measure of extra armor protection in addition to their primary purpose of simply being spare tracks.



A winter whitewashed Pz.Kpfw.III Ausf.J from Pz.Rgt.31 of the 5.Panzer-Division churns up a cloud of snow as it races through a Russian field during the winter of 1941-42. The emblem of the regiment, a red devil's head painted in a black rectangle, can be seen on the side of the turret.

Although this Pz.Kpfw.III Ausf.J has markings from Pz.Rgt.18 of the 18.Panzer-Division, it has not been converted to a Tauchpanzer as only Pz.Kpfw.III Ausf.F, G and H were used. Note the tactical sign of 18.Panzer-Division painted on both saddle bags on the motorcycle in the foreground.



Two crew members of a Pz.Kpfw.III Ausf.J replenish their ammunition. The vehicle has received a sloppy coat of winter whitewash paint, leaving large areas uncovered. Vehicles fitted with the 5cm KwK L/42 gun could carry 50 rounds of ammunition in racks on the sides of the hull and under the floor.



A Pz.Kpfw.III Ausf.J fitted with the 5cm KwK L/42 gun rolls through a Russian town during the summer of 1942. There were 1,549 Pz.Kpfw.III with the short barrel 5cm gun produced from March 1941 to July 1942.



A burned out Pz.Kpfw.III Ausf.J sits among the ruins of a bombed out Russian village in the summer of 1942. During July and August of 1942, there were almost 400 Pz.Kpfw.III destroyed on the Russian Front.



A comrade pays his respects over the graves of three crewmen of a knocked out Pz.Kpfw.III Ausf.J on the vast Russian Steppe. Despite severe losses, General von Paulus' Sixth Army was able to envelop more than 70,000 Soviet troops along with more than 1,000 tanks and 750 guns in the Don bend near Kalach in August 1942, opening the way to Stalingrad.



Two crew members of this Pz.Kpfw.III Ausf.J work to replace a damaged drive sprocket ring. The hull side extension that was drilled out for towing can just be seen over the head of the crewman on the left as well as the redesigned armored brake cooling vent that was introduced on the Ausf.J. The skewed angle on the front fender support brace suggests that the damage may have been caused by a mine although the first road wheel and track lying below the sprocket do not appear to be damaged.



This Pz.Kpfw.III Ausf.J has received a very scruffy coat of winter whitewash camouflage paint. Conditions were harsh for tank crewmen during cold weather as there was no heating system inside the tanks. This gunner is wearing a dirty reversible winter camouflage uniform with the white side out.



A Pz.Kpfw.III Ausf.J speeds along a dirt track in Russia during the summer of 1942. It was uncommon to see a Panzer III with the hub cap missing from the drive sprocket while it was quite common to see later production StuG.III Ausf.G without them.



The Pz.Kpfw.III Ausf.J with the 5cm KwK L/60 gun was brought into service in early 1942, but was still not powerful enough to effectively deal with the Russian T-34 or KV tanks. Due to the longer ammunition, the amount that could be carried was reduced to 84 rounds.



The crewmen of this new Pz.Kpfw.III Ausf.J, armed with the 5cm KwK L/60 gun, are enjoying a relaxing ride to the front on a railcar bound for the Russian Front. Beginning with Ausf.J production, two spare road wheels were stowed on special mounts on the left fender.



A dapper looking SS-Untersturmführer stands proudly in front of a new Pz.Kpfw.III Ausf.L. Additional 30mm spaced armor plates were added to the front of the turret and superstructure starting with Ausf.L production, although some, like this one, did not have the plate on the turret due to shortages. The front plate for the turret was also increased from 30mm to 57mm thick. Early on during production, the turret side visors and the loader's front visor were deleted. A strap for securing jerry cans to the turret roof has been attached using the bolts for the lifting hook.



Another Pz.Kpfw.III Ausf.L from the same SS unit has the name 'Ernst Stammer' painted on the side of the turret, probably in honor of a fallen crew member. It appears to be painted in the tropical two-color camouflage scheme authorized in March 1942 of 2/3 Braun RAL 8020 and 1/3 Grau RAL 7027. The tactical number is painted in white outline.



A Pz.Kpfw.III Ausf.J or L sits amid the burning ruins of a Russian village. The turret side visor was still being installed on early production Ausf.L along with hull side escape hatches, making an exact identification impossible. The tactical number '14' can be seen painted in white on the side of the turret.



Three SS crewmen pose for a photo on their new Pz.Kpfw.III Ausf.L which has not had the 30mm armor plate installed on the mantlet. The line that can be seen just below the gun barrel is the strap that held the dust cover on the muzzle in place.



A mixed group of Pz.Kpfw.III Ausf.J and L sit in front of a workshop building, probably somewhere in Germany. None of the vehicles has had the 30mm armor plate installed on the mantlet. The turret side visor can be seen on the nearest vehicle but not on the remainder.



This Pz.Kpfw.III Ausf.J or L appears to be a bit nose heavy, perhaps indicating that one or more of the front torsion bars have been damaged. Judging by the contrast around the white outline tactical number '14' painted on the side of the turret, the vehicle has been painted in a lighter camouflage color over the Dunkelgrau RAL 7021 base coat.



This Pz.Kpfw.III Ausf.J or L was photographed in the Russian city of Voronezh in the summer of 1942. It appears to have had a two color camouflage scheme applied over the Dunkelgrau base. The tactical number '324' is painted in white on the side of the turret and, like most of the early production Ausf.J, is missing the 30mm armor plate on the mantlet.



This Pz.Kpfw.III Ausf.J or L has been fitted with S-mine dischargers on the fenders, probably scavenged from a damaged Tiger I. Part of the tactical number '8' can be seen painted on the side of the turret.



A column of Pz.Kpfw.III Ausf.J or L drive past mounted infantry from a Kavallerie regiment in Russia. The tactical emblem of 8.Panzer-Division, a 'Y' with a short vertical line beside it, can be seen painted in black on the front plate beside the driver's visor. The crew have wound a tow cable around the front of the vehicle using the 'S' tow hooks for quick use if needed.



Beginning with the Pz.Kpfw.III Ausf.M, two Bosch headlights were installed on the left and right fenders in place of the lights previously installed beside the armored brake cooling vents on the glacis. Here we see the 30mm armor plate installed on the mantlet in addition to the spaced 30mm plate on the front of the superstructure.



The Pz.Kpfw.III Ausf.M was equipped with a deep wading exhaust system that included the installation of watertight doors under the engine deck overhang and on top of the air intakes on each side. A special muffler was fitted to the end of two exhaust pipes that curved out from under the overhang and was equipped with a float valve that would prevent water from flowing back into the engine.

A brand new Pz.Kpfw.III Ausf.M sports a textbook application of winter whitewash camouflage paint during the winter of 1942-43. The divisional emblem of 1.SS-Panzer-Grenadier-Division 'LSSAH' can be seen painted on the front plate next to the driver's visor as well as the new Bosch headlight on the left fender.



Another new Pz.Kpfw.III Ausf.M from 1.SS-Panzer-Grenadier-Division 'LSSAH' entrained for the Russian Front in January 1943. The division was reformed as a Panzer-Grenadier-Division in France in 1942 and took part in the Kharkov Offensive in February and March 1943 which resulted in the re-capture of the city and the destruction of several Russian tank and infantry divisions.



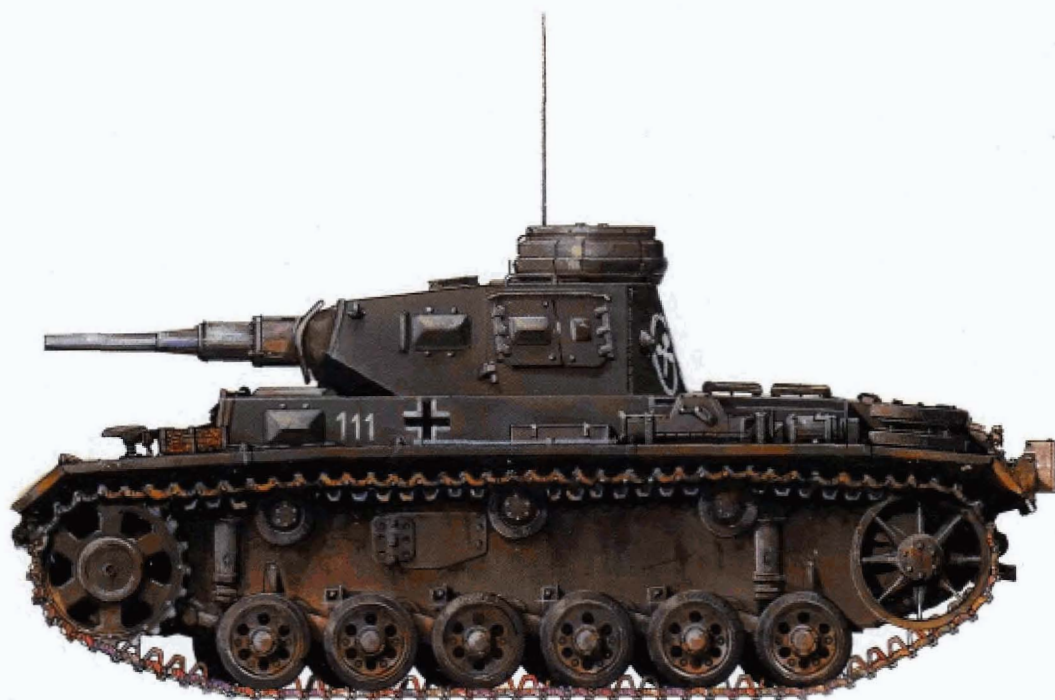
Pz.Kpfw.III Ausf.E, Pz.Rgt.36, 4.Panzer-Division, France, May 1940

The Pz.Kpfw.III Ausf.E is finished in the early war paint scheme of two-thirds Dunkelgrau Nr.46 and one-third Dunkelbraun Nr.45. The white three-digit tactical number is painted on both sides and the lower rear of the turret. The small white dot following the number indicates this vehicle belongs to Pz.Rgt.36 whereas Pz.Rgt.35 vehicles carried the number only. Other markings include the divisional tactical emblem painted in yellow on the left front plate beside the driver's visor and on the bulge on the back of the turret below the cupola and a white outline Balkenkreuz painted on each side and on the rear plate.



Pz.Kpfw.III Ausf.G, Pz.Rgt.5, 21.Panzer-Division, Tobruk, June 1942

The Pz.Kpfw.III Ausf.G has two-thirds Gelbbraun RAL 8000 and one-third Graugrün RAL 7008 applied over the original Dunkelgrau RAL 7021 after arrival in North Africa. It carried large red with white outlined tactical numbers on both sides of the turret and on the rear of the stowage bin. Other markings include the white DAK palm tree emblem of the front and both sides of the hull and the divisional tactical emblem, a white 'D' with a horizontal line through it, on the front and rear upper hull plates.



Pz.Kpfw.III Ausf.H, Pz.Rgt.3, 2.Panzer-Division, Greece, April 1941

This Pz.Kpfw.III Ausf.H is painted in Dunkelgrau RAL 7021. Small white tactical numbers are painted on both sides of the hull just behind the driver and radio operator's visors and on the back of the smoke candle rack. A white outline Balkenkreuz is painted on each side of the hull and on the rear plate. Also visible is a large playing card 'club' symbol inside a circle painted in white on the left rear of the turret, a white rhombus followed by a '1' on the rear plate along with the chassis number '66154' also painted in white. The divisional tactical emblem, an inverted cross with one vertical slash beside it, was painted in yellow on the front plate to left of the driver's visor.



Pz.Kpfw.III Ausf.J, Pz.Rgt.24, 24.Panzer-Division, Stalingrad, September 1942

This Pz.Kpfw.III Ausf.J is painted in Dunkelgrau RAL 7021 and has small red with white outline tactical numbers on both sides of the turret and a larger one on the rear of the turret stowage bin. A standard black and white Balkenkreuz was painted on each side of the hull and on the rear of the large stowage bin mounted on the back of the engine deck. The white divisional emblem, a leaping horseman surrounded by an oak leaf circle, was also painted on the rear of the large stowage bin as well as the right front mudguard.



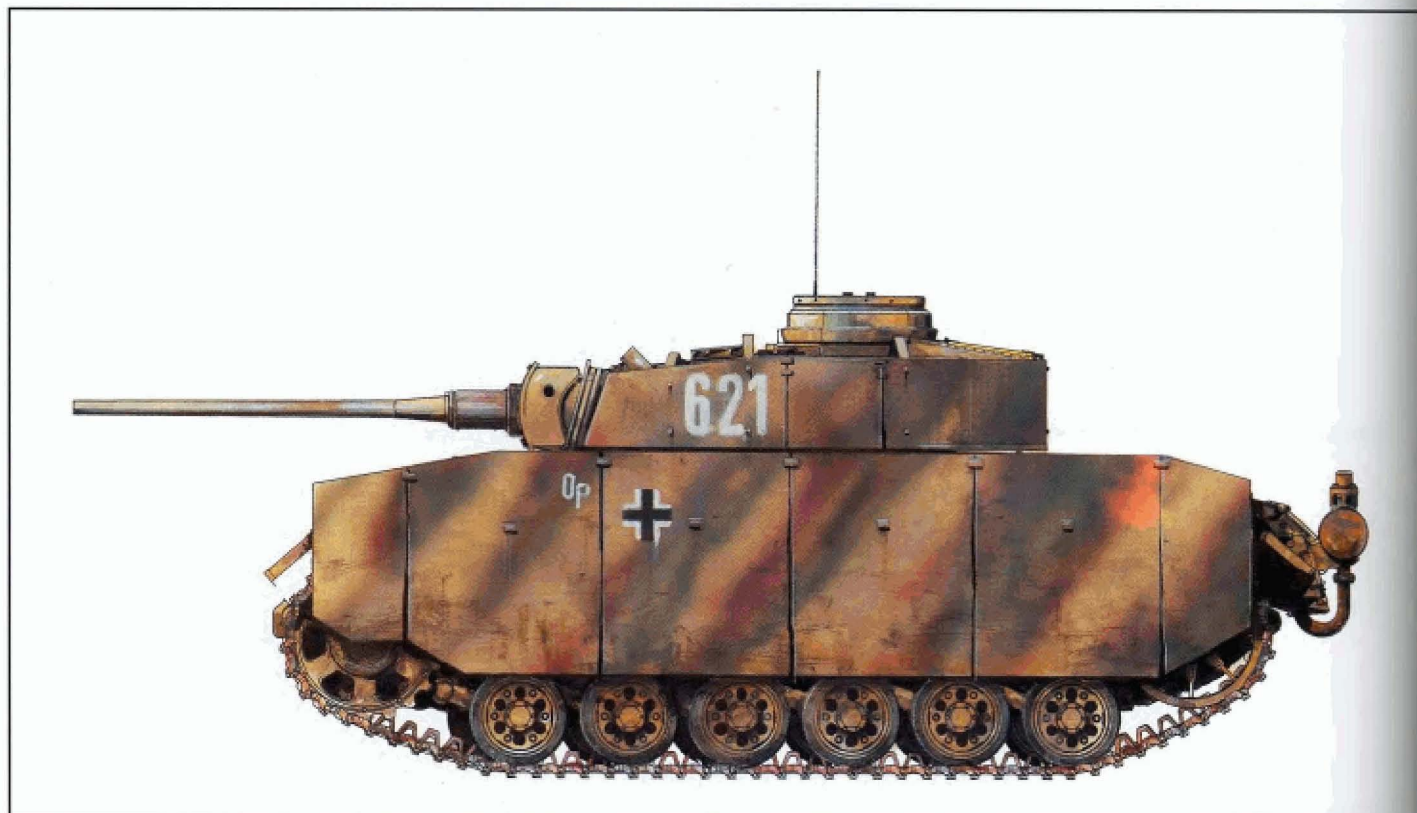
Pz.Bef.Wg.III Ausf.K, Panzer-Grenadier-Division 'Großdeutschland', Russia, January 1943

This Pz.Bef.Wg.III Ausf.K is painted in Dunkelgrau RAL 7021 and is simply marked with a white outline two-digit tactical number on each side of the turret. The number has been painted over a lighter colored square on the rear of the turret stowage bin, probably the result of painting over a previous number. A standard black Balkenkreuz with a white outline is painted on each side of the hull and just to the right of the deep wading exhaust pipes on the rear plate. This vehicle was the personal command tank of Oberst Graf Strachwitz, the commanding officer of Panzer-Regiment 'Großdeutschland'.



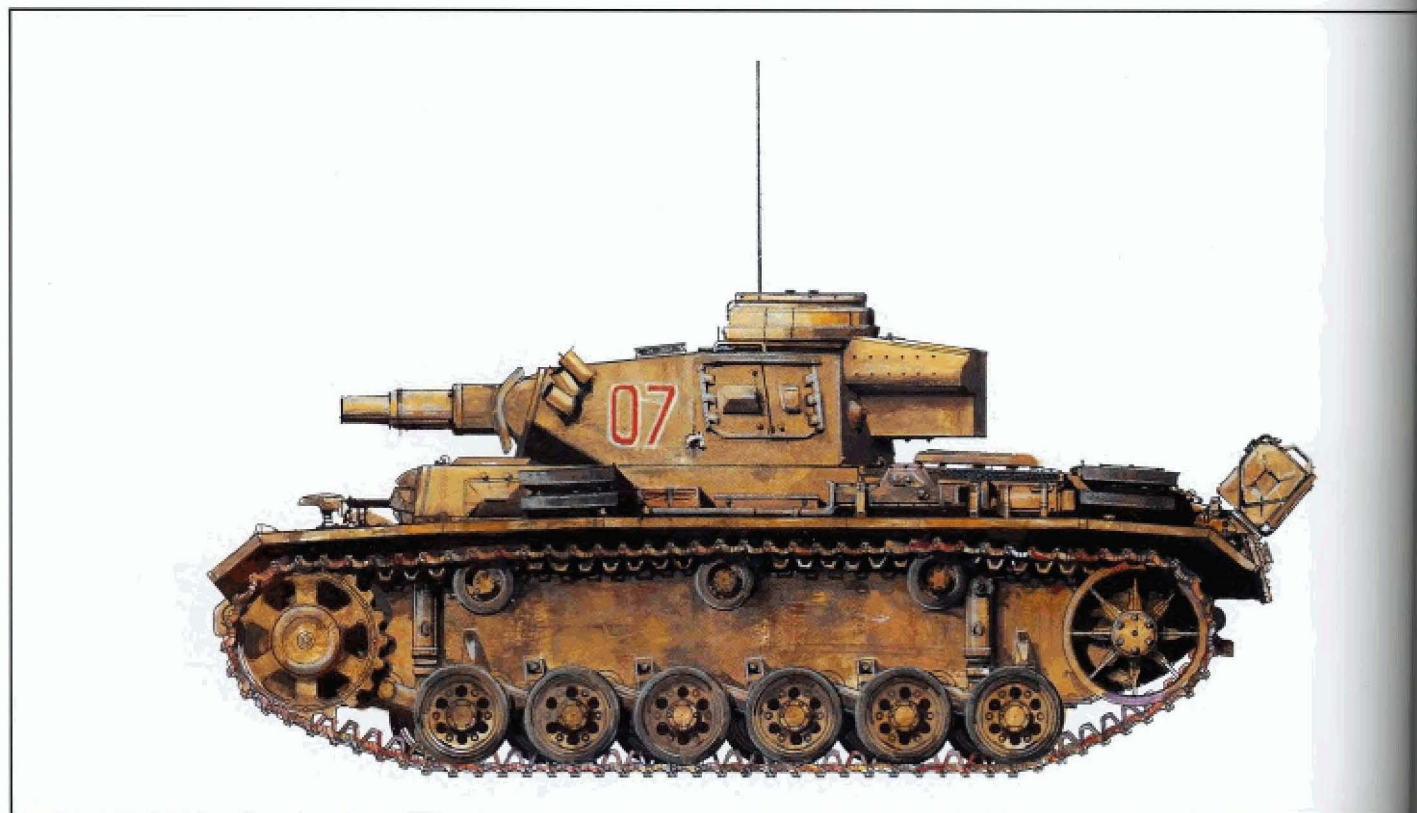
Pz.Kpfw.III Ausf.L, SS-Pz.Rgt.1, 1.SS-Panzer-Grenadier-Division 'LSSAH', Kharkov, February 1943

This Pz.Kpfw.III Ausf.L is painted in Dunkelgrau RAL 7021 with a uniform winter camouflage coat of white wash. The three-digit tactical numbers were painted on each side of the turret in red with a white outline, which blends in with the new camouflage paint. The division's shield and skeleton key emblem is also painted on the front and rear plate.



Pz.Kpfw.III Ausf.M, Pz.Rgt.11, 6.Panzer-Division, Kursk, summer 1943

This Pz.Kpfw.III Ausf.M is painted in Dunkelgelb RAL 7028 with a camouflage scheme of Rotbraun RAL 8017 and Olivgrün RAL 6003 stripes. The three-digit tactical number is painted in a white stenciled outline on the sides of the turret skirts and possibly on the rear as well. A black Balkenkreuz with a white outline is painted on the side skirt armor plates and would also likely have been painted on the hull and rear plates following standard practice. Other markings include a white 'Op' on the front plate and side skirts, which refers to the regimental commander's name, Oberst von Oppeln-Bronokowski, along with the division's special tactical marking assigned for the Kursk offensive.



Pz.Kpfw.III Ausf.N, s.Pz.Abt.501, Tunisia, spring 1943

This Pz.Kpfw.III Ausf.N is painted in the two-color tropical paint scheme authorized on 25 March 1942 consisting of two-thirds Braun RAL 8020 and one-third Grau RAL 7027. The two-digit tactical number has been painted in red with a white outline on both sides of the turret and on the sides of the stowage bin. The tactical sign for a s.Pz.Abt., a rhomboid with an 's' in script inside, has been painted in red on the left front and right side of the hull along with the yellow and black stalking tiger emblem of s.Pz.Abt.501.



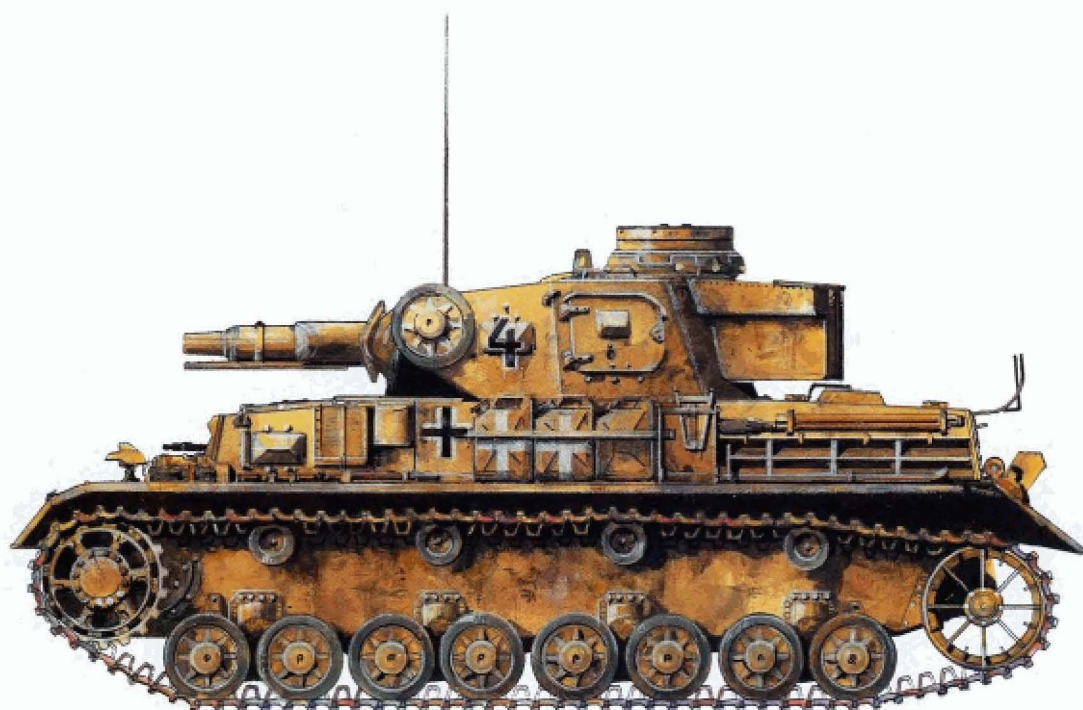
Pz.Kpfw.IV Ausf.A, Pz.Rgt.1, 1.Panzer-Division, Poland, September 1939

This Pz.Kpfw.IV Ausf.A is finished in the early war paint scheme of two-thirds Dunkelgrau Nr.46 and one-third Dunkelbraun Nr.45. Typically for early war vehicles, markings are limited to a large white Balkenkreuz on each side and rear of the turret and a small white three-digit tactical number painted on each side of the turret.



Pz.Kpfw.IV Ausf.C, Pz.Rgt.11, 6.Panzer-Division, France, May 1940

This Pz.Kpfw.IV Ausf.C is also finished in the early war paint scheme of two-thirds Dunkelgrau Nr.46 and one-third Dunkelbraun Nr.45, which was most often obscured by dust. Following the campaign in Poland, the large white Balkenkreuz was replaced with a smaller one, in this case simply a white stenciled outline. The three-digit tactical numbers are painted in yellow on small rhomboid metal plates mounted on each side and rear of the hull. The division's tactical emblem, an inverted 'Y' with two dots is painted in yellow on each side of the hull. The chassis number '80325' was stenciled on the jack and jack block in white.



Pz.Kpfw.IV Ausf.D, Pz.Rgt.8, 15.Panzer-Division, Libya, November 1941

On 17 March 1941, orders were issued that all vehicles to be sent to North Africa were to be painted in a new tropical paint scheme consisting of two-thirds Gelbbraun RAL 8000 and one-third Graugrün RAL 7008. The single black tactical number with a white outline indicates a vehicle from 4.Kompanie. Other markings include the divisional emblem, a red triangle with a vertical line through it, and a white DAK palm tree painted on the front plate and on the rear stowage bin. The red 'Wolfsangel' emblem of Pz.Rgt.8 also appears on the rear of the stowage bin. A standard black and white Balkenkreuz appears on both sides of the hull as well as on the lower right side of the rear plate next to the idler mount.



Pz.Kpfw.IV Ausf.E, Pz.Rgt.25, 7.Panzer-Division, Russia, summer 1941

This Pz.Kpfw.IV Ausf.E is painted in Dunkelgrau RAL 7021 and carried large red with white outlined tactical numbers on both sides of the turret. Smaller red and white numbers were also painted on the rear plate of the turret on each side of the stowage bin. A standard black and white Balkenkreuz was painted on each side of the hull and on the rear of the stowage bin. Each vehicle in the company was fitted with a long wooden unditching beam on the right side fender which necessitated relocating the jack to the left fender. In addition, a special metal spare road wheel stowage bin was located on the left side and a wooden Jerrycan rack added across the back of the engine deck.



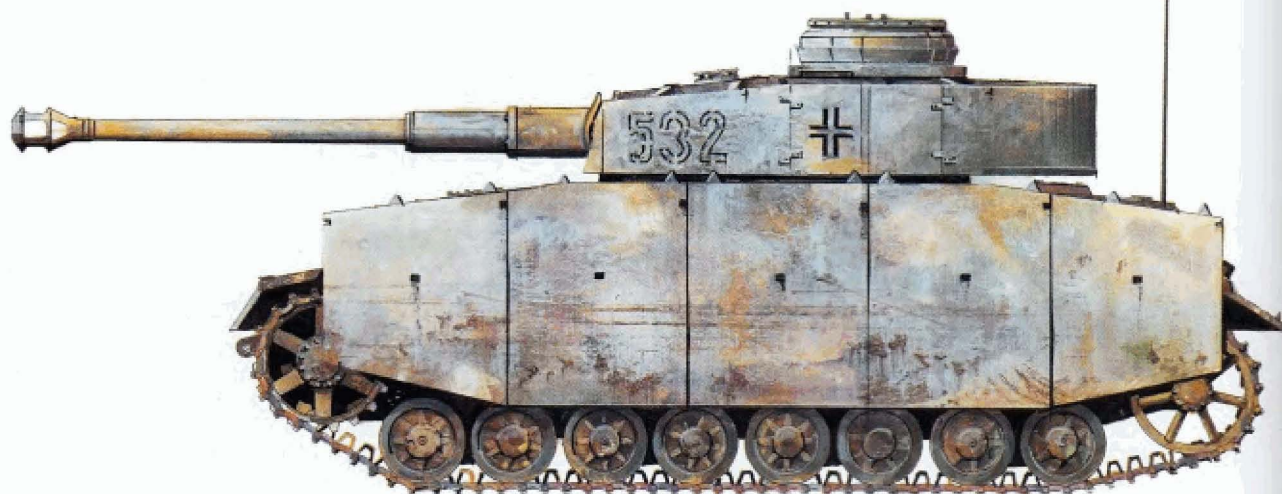
Pz.Kpfw.IV Ausf.F, Pz.Rgt.31, 5.Panzer-Division, Russia, spring 1942

Panzer-Regiment 31 was scheduled to be shipped to North Africa in 1941 and was equipped with vehicles that were painted in the two-color scheme prescribed for use in that theatre on 17 March 1941. This Pz.Kpfw.IV Ausf.F is painted with two-thirds Gelbbraun RAL 8000 and one-third Graugrün RAL 7008 and has had a camouflage squiggle line painted with Dunkelgrau RAL 7021 over. The small three-digit tactical numbers are painted in red. The divisional 'devil's head' emblem is painted on a small black rectangle on the side of the turret and the tactical sign, a yellow 'X' in a black square appears on each side of the hull.



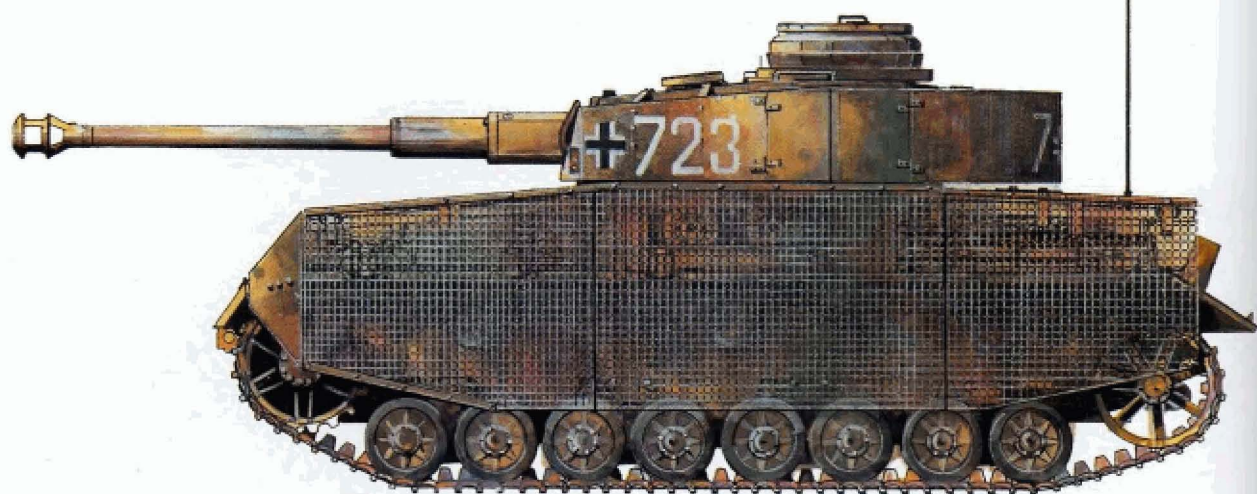
Pz.Kpfw.IV Ausf.G, Pz.Rgt.36, 14.Panzer-Division, Russia, summer 1942

Pz.Kpfw.IV Ausf.G is painted in the two-color tropical paint scheme authorized on 25 March 1942 consisting of two-thirds Braun RAL 8020 and one-third Grau RAL 7027. The three-digit stenciled tactical number '431' has been painted in yellow on both sides of the turret and on the rear of the stowage bin. The tactical sign is also painted in yellow on each side of the hull and on the stowage bin as well.



Pz.Kpfw.IV Ausf.H, Pz.Rgt.39, 17.Panzer-Division, Russia, January 1944

This Pz.Kpfw.IV Ausf.H is painted in Dunkelgelb RAL 7028 with a camouflage scheme of Rotbraun RAL 8017 and Olivgrün RAL 6003 patches that has been covered with a coat of winter whitewash camouflage paint. The three-digit stenciled tactical number is painted in black outline on each side and the rear of the turret side skirts. A black outline Balkenkreuz is painted on the forward turret side skirt access door. The divisional tactical emblem, a 'Y' with two horizontal slashes is painted on the front plate beside the drivers visor and was likely repeated on the left side of the rear plate. The early pattern hull side skirts have been modified to hang on the later skirt rail with the triangular teeth.



Pz.Kpfw.IV Ausf.J, Pz.Rgt.31, 5.Panzer-Division, East Prussia, October 1944

A new factory paint scheme was applied in August and September 1944, often referred to as the 'ambush' scheme. This Pz.Kpfw.IV Ausf.J is painted in Dunkelgelb RAL 7028 with a camouflage scheme of Rotbraun RAL 8017 and Olivgrün RAL 6003 patches with small spots of color applied over the larger patches to simulate sunlight passing through foliage. The three-digit tactical number is painted in large white numbers on the sides of the turret skirts and in smaller numbers on left side of the Balkenkreuz on the rear. The divisional 'devil's head' emblem is painted on a small black rectangle on the front edges of the turret skirt and the tactical sign, a yellow 'X' in a black square appears on the back of the vehicle. The vehicle is also fitted with the mesh hull side skirts introduced in September 1944.



A smoke discharger rack was installed on each side of the turret beginning with the Pz.Kpfw.III Ausf.M. This vehicle has also been fitted with special wide 'Winterkette' winter tracks that provided increased traction in deep snow and were issued to Panzer III and StuG.III units on the Eastern Front only. By this time a variety of warm winter clothing was available to the Panzer crewmen.



Soviet troops race past the remains of a Pz.Kpfw.III Ausf.M in the foreground and a Pz.Kpfw.III Ausf.L in the background in, what is probably, a staged photograph. In the spring of 1943, armored skirts began to be installed on some German AFV's including the Panzer III and IV and the StuG.III.



This Pz.Kpfw.III Ausf.N was built on the chassis of the Pz.Kpfw.III Ausf.L and has been fitted with a smoke discharger rack on each side of the turret. A total of 447 vehicles were built on the Ausf.L chassis plus 3 on the Ausf.J chassis between June 1942 and August 1943 plus another 37 converted from rebuilt Panzer III chassis.



The same two vehicles seen from the opposite side. The one on the left is a Pz.Kpfw.III Ausf.L while the one on the right is an Ausf.M. They are from Pz.Rgt.3 of the 3.SS-Panzer-Grenadier-Division 'Totenkopf' and were knocked out in the Kursk area in July 1943.



A Pz.Kpfw.III Ausf.N has gotten itself thoroughly mired in the soft ground beside a dirt road. This is one of 213 Pz.Kpfw.III Ausf.N manufactured on new Ausf. chassis as can be determined by the lack of headlight mounts beside the armored brake cooling vents. It was armed with the 7.5cm KwK L/24 which was more potent gun than the 5cm KwK L/60 gun. The two front hull Schürzen rail supports are of the style normally seen in the center position.



This captured late production Pz.Kpfw.III Ausf.N was built on the chassis of a Pz.Kpfw.III Ausf.M and is fitted with turret and hull skirt armor and the late one-piece cupola hatch. It is being towed by the T-34 to the left and the Soviet troops are simply striking a pose for the cameraman.



One of the rare Pz.Bef.Wg.III Ausf.D1 seen in France in 1940. It was based on the design of the Pz.Kpfw.III Ausf.D but had additional vision ports and pistol ports in the sides of the hull and was fitted with the driver's visor and hull MG ball mount that was used on the Pz.Kpfw.III Ausf.E. A dummy 3.7cm gun was mounted on the turret which was bolted in place and a large frame antenna was mounted on the engine deck. There were 30 of these vehicles produced from June 1938 to March 1939 and the surviving units were withdrawn from service in early 1941.



This Pz.Bef.Wg.III Ausf.E is unusual in that it has a hinged flap covering the opening for the driver's visor instead of the normal Fahrersehklappe 30. The main armament was replaced by a dummy gun to provide more space inside the turret and a dummy machine gun and a ball mount for an MG34 were installed in the mantlet. The fixed turret was moved forward on the hull and the turret ring was replaced by an opening that matched the shape of the base of the turret. The antenna mount on the right side of the vehicle was moved forward as well and can be seen here on the left side of the photo. Armored brake cooling vents have also been fitted to glacis. Only 45 of these vehicles were produced from July 1939 to February 1940.



A Pz.Bef.Wg.III Ausf.H from Pz.Rgt.2 of the 2.Panzer-Division drives through the streets of Athens past the Tomb of the Unknown Soldier with Mount Lycabettus rising in the background. It is missing the frame antenna on the engine deck but the mounts for it can still be seen as well as the small armored cover over the antenna wire on the back of the turret. The tactical emblem for 2.Panzer-Division, an inverted 'Y' with a short line beside it can be seen on the back of the turret as well as on the left side of the rear superstructure plate. The tactical number 'II N1' painted on the rhomboid plate indicates that this is the vehicle of the commander of the Nachrichten-Abteilung of the second battalion.

This late production Pz.Bef.Wg.III Ausf.H has been fitted with a dummy 5cm gun in place of the dummy 3.7cm gun on the mantlet. The relocated antenna mount on the right side can be clearly seen in this photo as can the additional 30mm armor plates added to the front of the vehicle. The Ausf.H was also fitted with 40cm tracks with the early eight-hole drive sprocket with a spacer ring and 95mm wide rubber tired road wheels. A large white outline tactical number '1101' can be faintly seen on the side of the fixed turret.



This Pz.Bef.Wg.III Ausf.H from Pz.Rgt.18 of the 18.Panzer-Division somewhere in Russia during the summer of 1941, was converted to a Tauchpanzer as can be seen by the watertight door on the air intake on the side of the engine deck and the bolt strip around the mantlet. They were fitted with the new cupola while the Ausf.E retained the earlier one. A second antenna mount was installed closer to the rear on the left side of the vehicle and folded forward into a wooden trough. A large frame antenna was mounted on the engine deck which readily identified these vehicles. The tactical sign for the division, a 'Y' with three horizontal lines through the tail, can be seen painted in yellow just in front of the white tactical number '21'. The division was equipped with 12 Pz.Bef.Wg.III at the beginning of Operation 'Barbarossa' in June 1941.





Another Pz.Bef.Wg.III Ausf.H that has been converted to a Tauchpanzer as can be seen by the curved exhaust pipes projecting from under the rear plate and the raised watertight door on the air intake on the side of the engine deck. Although the engine deck has been piled high with stowage, the outline of the frame antenna can clearly be seen. It is likely that this vehicle was also assigned to 18.Panzer-Division. (Photo courtesy of John Prigent)

A Pz.Bef.Wg.III Ausf.H converted to a Tauchpanzer from 18.Panzer-Division, seen crossing a river in Russia during the summer of 1941. The waterproof cover over the driver's visor has been fitted in place and the watertight doors over the engine ventilation grilles have been closed. In the original color photo, the spare road wheels mounted on the fenders can be seen to be painted with red oxide primer. (Photo courtesy of John Prigent)



An early Pz.Bef.Wg.III Ausf.H fitted with the early 3.7cm dummy gun and, unusually, a later cast drive sprocket. Evidence of past battles can be seen in the rows of crosses on the graves of fallen German soldiers in the background.



The antenna mounted on the left side and straight back on the turret provide the only evidence that this is a Pz.Bef.Wg.III Ausf.H. A new cast drive sprocket was introduced on the Pz.Kpfw.III Ausf.H however, the early eight hole drive sprocket with a spacer ring to accommodate the new 40cm tracks continued to be used on Pz.Bef.Wg.III.

This Pz.Bef.Wg.III Ausf.E from either 15. or 21.Panzer-Division in North Africa has been fitted with tropical engine deck hatches. Holes were cut into the hatches and covered with armored caps to protect the engine and the cooling fan speed was increased to improve ventilation. This later became standard on all Panzer III and StuG.III production. The prominent frame antenna is missing but the armored cover that protected the wire lead from the antenna into the back of the turret can be seen.

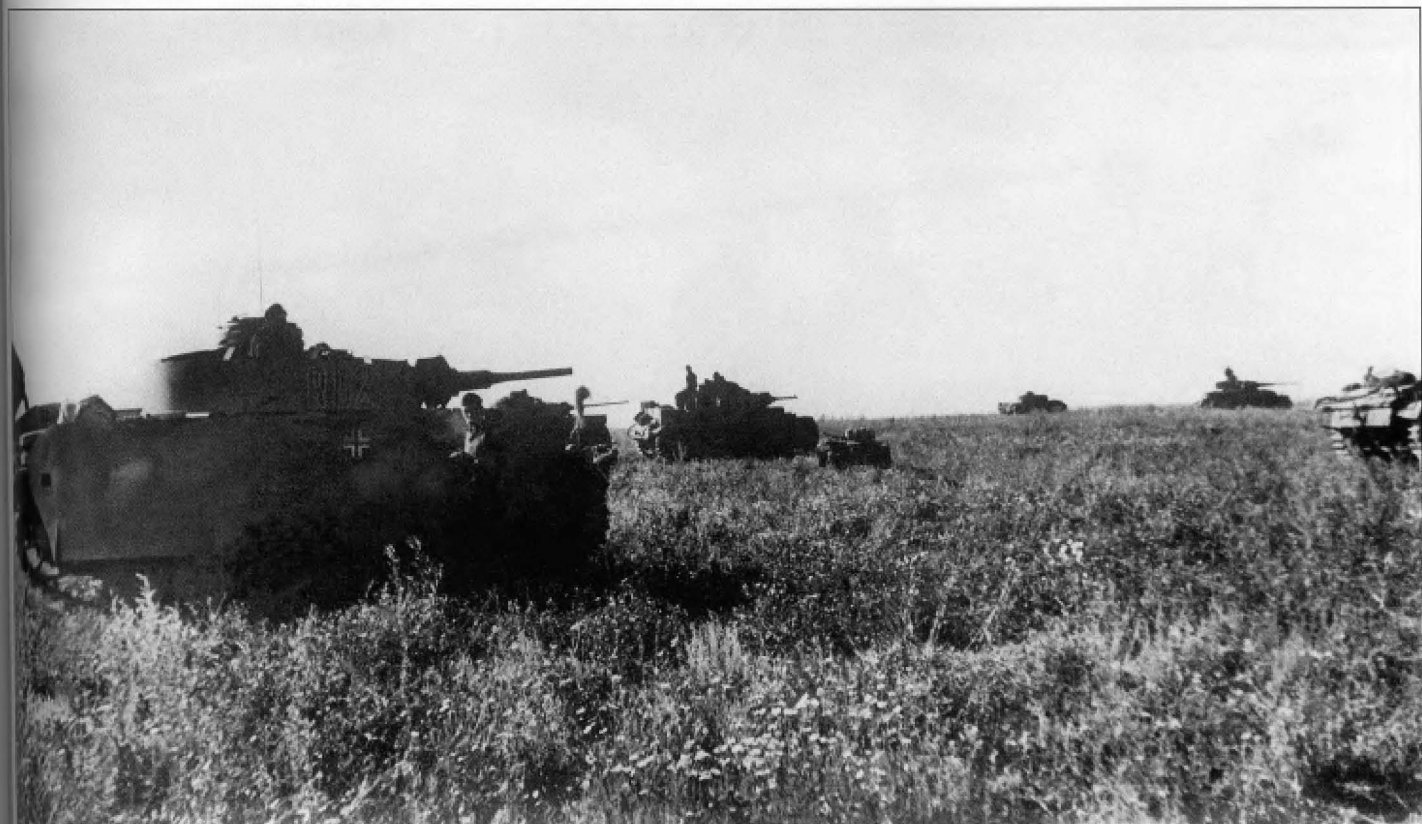


An early Pz.Bef.Wg.III Ausf.H fitted with the early 3.7cm dummy gun. A pistol port replaced the ball machine gun mount in the front plate. The lifting hooks for the turret were mounted on the roof instead of the sides and rear as on a standard Panzer III. The tactical sign for a Nachrichten-Abteilung is painted in white outline on the top left corner of the front plate with a solid white tactical sign for a Panzer-Division Stab, a rhomboid with a small flag on top, painted inside of it.

The chassis number '70063' painted on the front plate of the superstructure clearly identifies this as a Pz.Bef.Wg.III Ausf.H. The tactical sign of 3.Panzer-Division can be seen between the spare road wheel and the pistol port and a large white 'G' can also faintly be seen on the front fender. There were 145 Pz.Bef.Wg.III Ausf.H built from November 1940 to September 1941 with chassis numbers from 70001 to 70145. Although the vehicle appears to have a mottled camouflage paint scheme, it is more likely that it is simply shadows from the surrounding trees on the dusty dark gray paint.



In January 1943, orders were issued to begin converting standard Pz.Kpfw.III to Panzerbefehlswagen by removing an ammunition rack and adding a long range radio. To provide additional space for the radio the hull machine gun was eliminated and replaced by a pistol port. From August to November 1942, 81 were produced on new Pz.Kpfw.III Ausf.H and a further 104 converted from March to September 1943. Note the unique marking 'Adj' painted on the rear of the turret stowage bin and under the turret side hatch doors indicating that this is the Regimental Adjutant's vehicle. The tactical number 'R02' was also painted in white on the side of the turret and the 'K' on the rear plate indicates that the vehicle was assigned to one of the Panzer Divisions in Gruppe von Kleist, possibly 11.Panzer-Division. As if to validate the decision to begin arming these command vehicles, the crew has just scored a hit on a Russian T-26 which can be seen burning in the background.



This late Pz.Bef.Wg.III mit 5cm KwK L/42 has also been fitted with turret and hull Schürzen and barely visible on the original print, a star antenna on the engine deck. The tactical number 'R02' indicates that this is the Regimental Adjutant's vehicle. The photograph was taken in the Bjelgorod area in July 1943 during the Kursk offensive.



The Pz.Bef.Wg.III Ausf.K utilized a modified Pz.Kpfw.IV Ausf.F or Ausf.G turret mounted on a Pz.Kpfw.III Ausf.M chassis. The main armament was the 5cm KwK L/60 gun mounted on a narrow Pz.Kpfw.III mantlet leaving space for a pivoting visor, similar to the driver's visor, on the right side of the gun. A star antenna mounted on the engine deck replaced the large frame antenna. This vehicle is the personal mount of Oberst Graf von Strachwitz, commander of Pz.Rgt. 'Großdeutschland' and was photographed near Kharkov in March 1943. Other photographs of this vehicle show that it still retains the side escape hatches that were dropped during production of the early Pz.Kpfw.III Ausf.L.



The Pz.Beob.Wg.III was an armored artillery observation vehicle constructed on the chassis of obsolete Pz.Kpfw.II. The additional 30mm armor plate on the front of the superstructure and the Fahrersehklappe 30 driver's vision identify this one as an Ausf.G. A dummy gun was mounted in a new 50mm thick mantlet with a ball mount in the center for an MG34. The ball mount in the hull was removed to make room for the additional radio and replaced with a pistol port. A periscope was also installed in the turret roof for safe observation from inside the vehicle.

This Pz.Beob.Wg.III Ausf.F has been fitted with turret and hull schürzen that was introduced in the spring of 1943. Note the star antenna mounted on the engine deck for the long range radio. They were issued to the Artillerie Abteilung (Sfl.) for directing fire of the Wespe and Hummel batteries in the Panzer Divisions and were first used in the spring of 1943. There were 262 produced from February 1943 to April 1944.

Panzerkampfwagen IV (Sd.Kfz.161)



The Pz.Kpfw.IV Ausf.A was thinly armored with a maximum plate thickness of 15mm. Total production amounted to 35 vehicles produced from October 1937 to March 1938. They were in service for the campaigns in Poland, Norway and France but were retired in the spring of 1941.

This Pz.Kpfw.IV Ausf.A is seen in action somewhere in France in 1940. The wider superstructure and circular turret splash ring can be clearly seen in this view as can the two piece driver's and radio operator's hatches. The distinctive drum shaped cupola was the same as the one used on the Pz.Kpfw.III Ausf.B and had eight vision slits protected by fixed glass blocks. It was armed with a 7.5cm KwK L/24 gun with a coaxial MG34 machine gun as well as one MG34 in a ball mount on the front plate.



A column of Pz.Kpfw.IV Ausf.B or C travel down a muddy Polish road in September 1939. There were only minor external differences between the Ausf.B and Ausf.C, making it impossible to make a positive identification unless certain specific features can be seen. The most obvious difference is that the coaxial MG on the Ausf.C has a long armored sleeve while the Ausf.B has none at all. There were also minor differences in the shape of the mantlet and type of engine deck hatch locks. It did not take long for the crew to realize that the prominent white crosses provided an excellent aiming point for Polish anti-tank gunners and they quickly obscured them with mud or paint.



This Pz.Kpfw.IV Ausf.B or C is seen in France in the spring of 1940. Note the new style of Balkenkreuz that replaced the highly visible larger white crosses that were previously used. Unfortunately, the radio operator standing in his hatch is hiding the coaxial MG, the most prominent feature that could positively identify this as an Ausf.B or C. The number '201' can be seen painted beside the driver's visor.

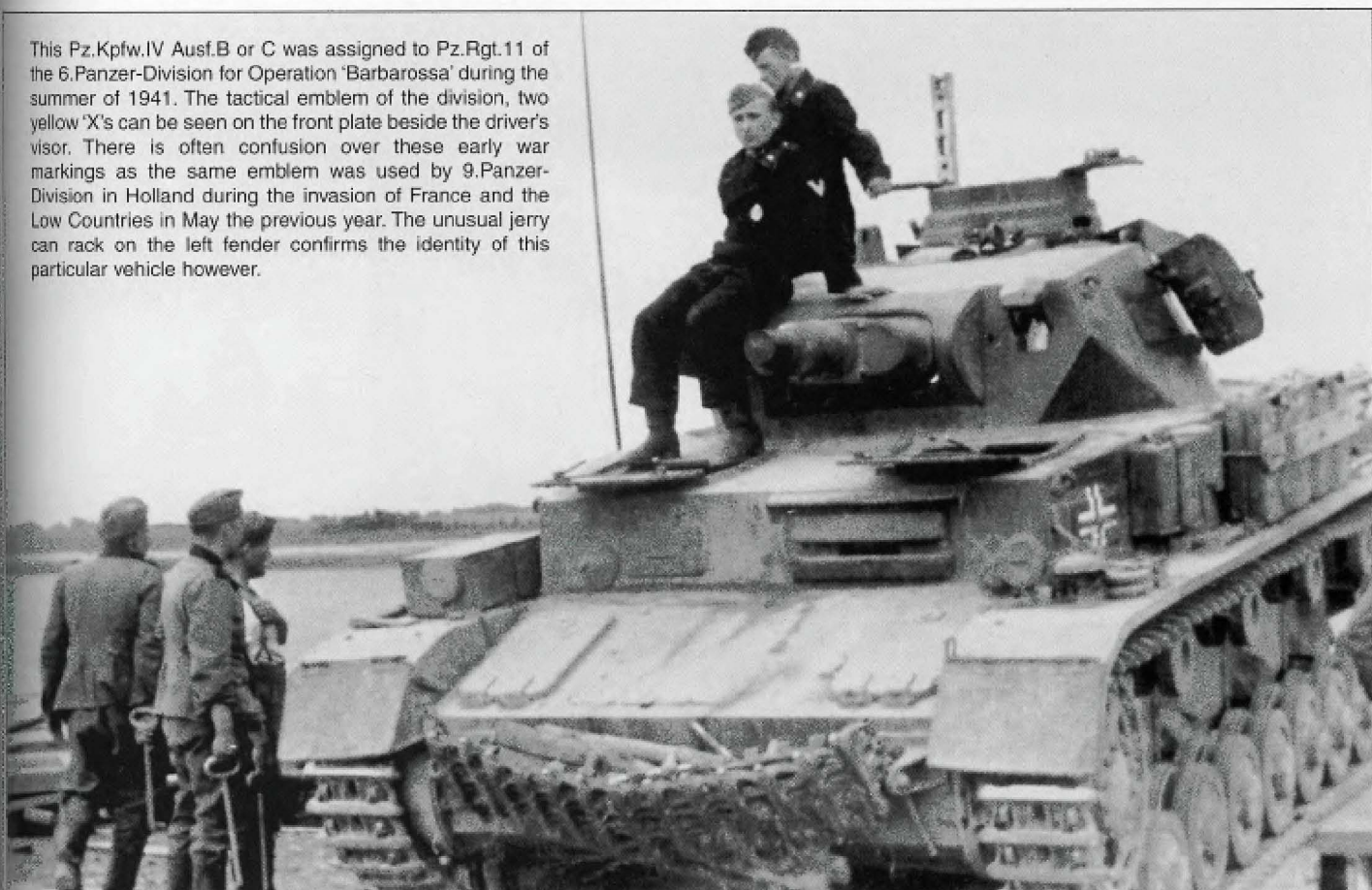


A damaged Pz.Kpfw.IV Ausf.B or C waits for a recovery vehicle to haul it back to the field workshop for repair. On November 7, 1938 orders were issued directing that all armored vehicles were to be painted with 2/3 Dunkelgrau Nr.46 and 1/3 Dunkelbraun Nr.45 and this was not changed until 31 July 1940 when a single color, Dunkelgrau Nr.46, was to be used. A heavy coat of dust completely covers this Panzer giving it a light appearance and completely obscuring the two color paint scheme.

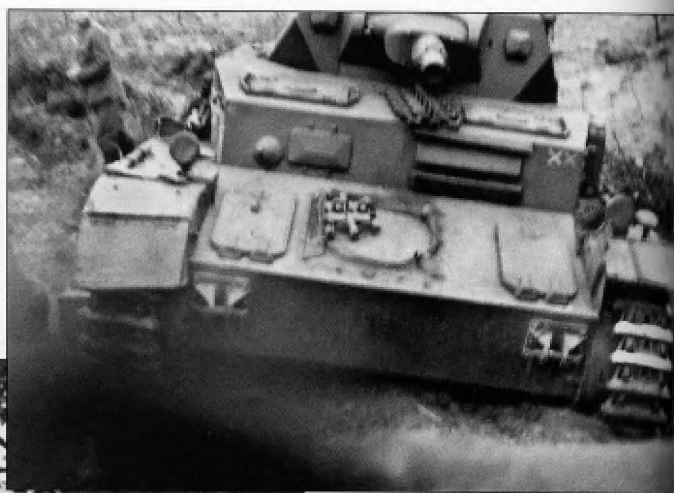


The wooden antenna trough is missing off this battle scarred Pz.Kpfw.IV Ausf.B or C along with most of the tools normally carried and the hinged mudguards. The tactical number '813' is painted in white on a black metal rhomboid plate following standard early practice. This would have been carried on both sides and the rear of the vehicle. Note how the dust has completely covered lower parts of the hull and running gear.

This Pz.Kpfw.IV Ausf.B or C was assigned to Pz.Rgt.11 of the 6.Panzer-Division for Operation 'Barbarossa' during the summer of 1941. The tactical emblem of the division, two yellow 'X's can be seen on the front plate beside the driver's visor. There is often confusion over these early war markings as the same emblem was used by 9.Panzer-Division in Holland during the invasion of France and the Low Countries in May the previous year. The unusual jerry can rack on the left fender confirms the identity of this particular vehicle however.



This Pz.Kpfw.IV Ausf.B is probably from Pz.Rgt.33 of the 9.Panzer-Division as the two yellow 'X's are painted in a different location and since only 42 Pz.Kpfw.IV Ausf.B were produced, there would not likely be too many available for combat in Russia. Note the absence of an armored sleeve for the coaxial machine gun.



The crew of this Pz.Kpfw.IV Ausf.C takes a break from the fighting in France in 1940. A canvas dust cover has been fitted to the long coaxial MG barrel sleeve that was one of the few external identification features of the Ausf.C. Also note the dust cover fitted over the muzzle of the 7.5cm KwK L/24 gun barrel. The wooden storage box mounted on the right fender has received a small caliber hit which has caused some damage.



One of the distinguishing features of the Pz.Kpfw.IV Ausf.B and C was the visor and pistol port located in front of the radio operator's position. Another was the steep slope on the engine ventilation grilles which had three horizontal dividers instead of one as seen on the Ausf.D to J. Note the white rhomboid with the number '5' painted on the front plate near the left towing pintle. The tactical emblem for 2.Panzer-Division, two yellow dots, can be seen painted on the front plate between the driver's and radio operator's visors.



The steep slope of the engine ventilation grilles can be seen in this rear view of a Pz.Kpfw.IV Ausf.B or C. The Pz.Kpfw.IV Ausf.A to F were fitted with flat engine deck hatches, with the exception of those Ausf.D to F that were specialized, so stowage piled on the engine deck did not present a problem. This vehicle is missing the small, horizontal turret traverse motor muffler normally fitted above the main exhaust muffler.



A Pz.Kpfw.IV Ausf.B or C rolls through a French town during the invasion of France in May 1940. By this time the early Panzer beret had been largely replaced by a black Feldmütze although it was not uncommon to see the Army issue field-grey Feldmütze worn with the black Panzer uniform as seen here.



This photo of a Pz.Kpfw.IV Ausf.B or C provides a good view of the early engine ventilation grilles. Judging from the fixed tarp and exposed position, combat is not imminent. The maximum armor thickness on the Pz.Kpfw.IV Ausf.B and C was 30mm on the front of the turret, superstructure and hull and 15mm on the sides and rear.



The armored sleeve on the coaxial machine gun provides proof that this is a Pz.Kpfw.IV Ausf.C. The chassis number of the vehicle is painted on the end of the muzzle dust cover, an early common practice also seen on variously on jacks, jack blocks and the hull itself.



This Pz.Kpfw.IV Ausf.C has been fitted with an additional 30mm armored plate on the front of the lower hull.



This severely damaged Pz.Kpfw.IV Ausf.C appears to have been cannibalized for spare parts and left abandoned in a French town. The drive sprocket and final drive housing has been removed and can be seen lying on the ground in front of the vehicle.



A crew member poses for a photo with his Pz.Kpfw.IV Ausf.C in his black Panzer uniform and field-grey Feldmütze. Both the 7.5cm KwK L/24 gun and the coaxial MG34 have dust covers on them.



A damaged Pz.Kpfw.IV Ausf.C is inspected by curious German soldiers. The armored sleeve is clearly visible in this photo as are the radio operator's visor and pistol port and the antenna deflector mounted on the main gun. The very light color of the vehicle appears due to remains of a well applied winter whitewash paint.



This Pz.Kpfw.IV Ausf.B or C has the oak leaf emblem of 1.Panzer-Division painted on the front of the turret. The tactical number, a white '822' followed by a white dot further identifies it as belonging to II.Abteilung of Pz.Rgt.2. Pz.Rgt.2 was equipped with 20 Pz.Kpfw.IV in May 1940 during the battle for France.



This Pz.Kpfw.IV Ausf.B soldiered on into 1944 where it is seen here with Pz.Rgt.22 of the reformed 21.Panzer-Division in France just before D-Day. The division was poorly equipped and had 21 obsolete Pz.Kpfw.IV with the 7.5cm KwK L/24 in its inventory at this time. Missing most of its tools and equipment, it doesn't look ready for combat.



This ungainly looking vehicle is a Munitionsschlepper für Karlgerät, or munitions carrier for the 60cm self-propelled heavy siege mortar known as the 'Karl'. Initially built on the chassis of the Pz.Kpfw.IV Ausf.D like this one, some were later constructed on Pz.Kpfw.IV Ausf.F chassis as well as some on rebuilt Pz.Kpfw.IV chassis. It carried four rounds of 60cm ammunition in the box-like superstructure and was fitted with a small crane to handle the heavy rounds.



Many Pz.Kpfw.IV Ausf.C and D were converted to Brückenleger IV or bridge layer tanks which mainly saw service in the Panzer Division in 1940. Two bridge designs were used, one by Krupp as seen here and one by Magirus. Further production was cancelled after the battle of France and most were re-converted back into gun tanks.



The Pz.Kpfw.IV Ausf.D featured redesigned engine ventilation grilles and had a new external gun mantle and a Kugelblende 30 MG ball mount like the one used on the Pz.Kpfw.III Ausf.E to H, in front of the radio operator's position. The triangular device mounted on the hull below the crewman standing on the vehicle was used to draw the track sections together with the aid of a pry bar to enable the track pin to be inserted.



This is a Pz.Kpfw.IV Ausf.D that was converted to a Tauchpanzer and assigned to Pz.Rgt.18 of the 18.Panzer-Division seen in Russia in 1941. It is towing a special fuel trailer. The standard muffler was replaced with a deep wading exhaust system which can be seen on the rear of the hull. During the early successes when the Panzers advanced with lightning speed, it was common practice to display the Nazi flag to identify German tanks to Luftwaffe pilots from the air.



Another Pz.Kpfw.IV converted to a Tauchpanzer from Pz.Rgt.18 of the 18.Panzer-Division. Similarly to the Pz.Kpfw.III, a bolt flange was added around the front of the turret and hull MG mount for attaching water tight covers for deep wading. The tactical emblem, a yellow 'Y' with three horizontal lines through the tail, can be faintly seen in front of the tactical number '533'.



The emblem of Pz.Rgt.18 of the 18.Panzer-Division, black shield outlined in white with a white skull riding on wavy lines representing water, can be clearly seen on the turret stowage bin of this Pz.Kpfw.IV Ausf.D that has been converted to a Tauchpanzer. The tactical emblem in yellow and number in white can also be seen. The vehicle has been captured by the Soviets and is now in service against its former owners. (Photo courtesy of John Prigent)



A Pz.Kpfw.IV Ausf.D from one of the Panzer Divisions assigned to Gruppe von Kleist during Operation 'Barbarossa' in June 1941. Whereas the Pz.Kpfw.IV Ausf.B and C were fitted with a straight front plate on the superstructure, the Pz.Kpfw.IV Ausf.D featured a stepped plate arrangement similar to the one on the Pz.Kpfw.IV Ausf.A. A white outline rhomboid with a '3' beside it can be faintly seen on the upper left side of the front plate.



A Pz.Kpfw.IV Ausf.D, identified by the shape of the engine ventilation grille, rolls down a country road in France in May 1940. A non-standard turret stowage bin has been added to the turret and a large bundle of fascines and some personal belongings are being carried on the engine deck.

The emblem of Pz.Rgt.18 of the 18.Panzer-Division along with a white tactical number '321', can be seen just above the bundle of fascines stowed on the engine deck of this Pz.Kpfw.IV Ausf.D converted to a Tauchpanzer. The unit also had a unique method for carrying spare road wheels on the rear plate.



The crew of this Pz.Kpfw.IV Ausf.D rest and relax as they wait for new orders, somewhere in Russia in 1941. The tactical emblem of 20.Panzer-Division, a horizontal 'E' painted in yellow, can just be seen above the headlight mounted on the left fender. The division also used large, yellow two-digit tactical numbers painted on the forward side of the turret. The first number is hidden here by the crewman's leg but the complete number '70' can be seen on the open box lid behind the cupola.



This Pz.Kpfw.IV Ausf.D from one of the Panzer-Division in Gruppe von Kleist is notable for its left front drive sprocket which was from a Pz.Kpfw.IV Ausf.E. Special racks on the fenders and turret roof carry no less than 14 jerry cans of fuel for the attack on the Soviet Union on June 22, 1941. The tactical number '423' can be seen painted in white on the side of the turret.

The crew of this Tauchpanzer IV Ausf.D and some infantrymen share a moment of camaraderie. The flange that the watertight mantlet cover was bolted to can be seen along the right side and top of the turret. A total of 48 Pz.Kpfw.IV Ausf.D were converted to Tauchpanzer in July and August 1940.



This Pz.Kpfw.IV Ausf.D displays the emblem of Pz.Rgt.7 of the 10.Panzer-Division, an outline of a bison, painted on the side of the turret. A color wartime postcard of one of the regiment's vehicles showed the outline was painted in light blue, not white. A large single digit tactical number '4' is painted on the side of the turret in white outline and the two markings were repeated on the rear of the turret stowage bin.



This Pz.Kpfw.IV Ausf.D has been fitted with additional 30mm armor plates to the front and sides of the superstructure and sides of the hull that were introduced in July 1940. The tactical number '51' is unusual in that Pz.Kpfw.IV's were normally assigned to either the 3. or 6.Kompanie in Abteilung with three companies or the 4. or 8.Kompanie in Abteilung with four companies.



Another exception to the standard tactical numbering system is 18.Panzer-Division which had Tauchpanzer IV assigned to most, if not all, of its companies. Here we see '711' and '721' from 7.Kompanie. The divisional emblem, a white skull on a black shield with wavy lines representing water, can be clearly seen on the transport truck following behind.

All Pz.Kpfw.IV Ausf.D returned for refurbishing after July 1942, were upgraded with the 7.5cm KwK L/48 gun, 40cm tracks, 90mm wide road wheels and drive sprockets and idler wheels from Pz.Kpfw.IV Ausf.G production. The turret Schürzen were added sometime after they were introduced into production in May 1943. Photos of these vehicles used in combat are rare with at least one being knocked out in Italy.





Pz.Kpfw.IV Ausf.E converted to a Tauchpanzer from 8./Pz.Rgt.35 of the 4.Panzer-Division. A Pz.Kpfw.III Ausf.G can be seen behind it along with a Pz.Kpfw.II and another Pz.Kpfw.III converted to a Tauchpanzer. Additional 30mm armor plates were fitted to most Pz.Kpfw.IV Ausf.E and can be seen on the front and sides of the superstructure and sides of the lower hull.



Another Pz.Kpfw.IV Ausf.E converted to a Tauchpanzer. This is one of the early production vehicles that did not receive the additional 30mm plates bolted to the front or 20mm plates bolted to the sides the superstructure due to shortages. There is a partially visible tactical number below the spare road wheel on the side of the turret, either a '3', '5' or '6'. This vehicle was assigned to Pz.Rgt.35 of the 4.Panzer-Division. (Photo courtesy of John Prigent)



This Pz.Kpfw.IV Ausf.E has come to grief a second time when the Sd.Ah.116 trailer it was on fell into a bomb crater. A new, reinforced cupola was introduced on the Ausf.E along with a new pivoting driver's visor called the Fahrersehklappe 30. The rear plate on the turret was changed to a single bent plate which eliminated the bulge below the cupola and a new fume extraction fan was installed on the turret roof. The tactical number '200' can be seen painted in white on the side of the turret and a white outline rhomboid with a '2' beside it can be seen on the top left corner of the front plate.



This Pz.Kpfw.IV Ausf.E is one of the early production vehicles that did not receive the additional 30mm armor plates on the front and sides of the superstructure. New flush steering brake access hatches were also introduced on Ausf.E production. The tactical emblem for 9.Panzer-Division can be seen painted to the left of the driver's hatch.



Another Pz.Kpfw.IV Ausf.E that did not receive the 30mm armor plates on the superstructure but was fitted with them on the lower hull sides. Two different styles of hubcap can be seen on the road wheels, one new one introduced on the Ausf.E and seven from the Ausf.A-D. The flush steering brake hatches can be seen along with the new hinge design. A redesigned drive sprocket was introduced and the turret side hatch stop from the Ausf.D was replaced with one from the Pz.Kpfw.III. Two Luftwaffe men are seen here posing for their photograph somewhere in Russia.



Armor protection on the Pz.Kpfw.IV Ausf.F was improved with the introduction of 50mm thick plates on the hull, superstructure and turret and 30mm thick plates on the sides. To accommodate the additional weight, the tracks were widened to 40cm and the rubber tired road wheels increased from 75mm to 90mm wide. The one-piece turret side hatch was replaced with two-piece hatches from Pz.Kpfw.III production. The tactical sign of 20.Panzer-Division can be seen painted on the front plate beside the driver's visor.

A new dished drive sprocket was introduced to accommodate the wider tracks along with a new idler wheel of welded tubular construction. The hull machine gun ball mount was changed to the Kugelblende 50 and a new driver's visor, the Fahrersehklappe 50 were fitted to the new 30mm straight front plate. Some Ausf.F were tropicalized by adding ventilation grilles in the engine deck hatches.





This new Pz.Kpfw.IV Ausf.F2, produced in March 1942, has been painted with a tropical color scheme of 2/3 Braun RAL 8020 and 1/3 Grau RAL 7027 for deployment to North Africa. The only external difference between the Ausf.F and Ausf.F2 was the new 7.5cm KwK L/43 gun. Initially, it was named Ausf.F, but this was officially changed on 1 July 1942 to Ausf.G. The object lying on top of the hull beside the turret is the canvas dust cover for the hull machine gun.



An armored brake cooling vent was added to the brake access hatches on the glacis. The new drive sprocket and idler design along with the two-piece turret side hatches can be seen in this photo. Other improvements include a new shorter muffler, modifying the turret traverse motor muffler and redesigning and moving the armored smoke candle rack to the left side of the rear plate. There were 462 Pz.Kpfw.IV Ausf.F produced from April 1941 to March 1942.



The early Pz.Kpfw.IV Ausf.F2 was fitted with a single baffle round muzzle brake. Approximately 238 were produced from March to July 1942 before the name was changed but it is not known how many were completed with the early muzzle brake. This one is from 2./Pz.Abt. 'Großdeutschland', which was equipped with 12 Pz.Kpfw.IV Ausf.F2(G) in July 1942. At this time, the Abteilung employed a unique method of marking their vehicles using either one, two or three horizontal lines representing the company followed by a single digit. The divisional emblem, a white 'stahlhelm' can be seen painted on the left hinged mudguard.

This Pz.Kpfw.IV Ausf.F2 belonged to III./Pz.Rgt.204 which was assigned to 22.Panzer-Division. The divisional emblem, an arrow pointing up to the right with two strokes through the shaft, was painted in yellow on the back of the smoke discharger rack. The three digit tactical number '912' is painted in white on the side of the turret signifying it is the second vehicle in the 1st platoon of the ninth company.



A Pz.Kpfw.IV Ausf.F and a Pz.Kpfw.IV Ausf.F2 from Pz.Abt. 'Großdeutschland' photographed on the Eastern Front during the summer of 1942. This photo provides a good comparison of the difference between the short and long barrel Pz.Kpfw.IV.



This early Pz.Kpfw.IV Ausf.F2 is being towed by an Sd.Kfz.9 Famo half-track prime mover using tow bars. Starting in April 1942, the turret side hatches were deleted along with the right visor in the turret front although evidently not at the exact same time as can be seen in this photo. The elevated gun suggests that the travel lock connecting the breech to the turret roof has been engaged. The color of the gun barrel looks darker indicating it is still painted with the dark grey heat resistant primer.



In June 1942, a bin for stowing spare road wheels was added to the left fender along with brackets for spare track links on the glacis. The missing turret side visor and the lack of the spare road wheel bin suggest that this is an April/May 1942 production Pz.Kpfw.IV Ausf.F2. A shipping stencil is painted on the side of the turret below the tactical number '623'.



This Pz.Kpfw.IV Ausf.F2 is still fitted with the turret side visor indicating it was produced in March or April 1942. The outward appearance of the Pz.Kpfw.IV would not change significantly through to the end of the war.



The 30mm Zusatzpanzer and antenna deflector can be clearly seen on this new Pz.Kpfw.IV Ausf.G seen in Russia in the summer of 1942. Unusually, a shipping stencil can be seen painted on the lower front side of the turret. The light color suggests that it is also painted in a tropical scheme. The final drives on the Ausf.A to Ausf.G were protected with curved armor plates bolted to the housing which can be clearly seen in this photo. Reinforced final drive housings were introduced on the Ausf.H which eliminated the curved plates.



A new Pz.Kpfw.IV Ausf.G in a tropical paint scheme, being secured for rail transport to the front. The spare road wheel storage bin on the left fender and spare track brackets on the glacis can be seen in this photo. The gun barrel is also painted with dark grey heat resistant primer and an antenna deflector has been added on the right side of the mantlet. Starting in May 1942, some Pz.Kpfw.IV Ausf.F2 and G had 30mm armor plates, called Zusatzpanzer, welded to the front of the superstructure and hull.



Another Pz.Kpfw.IV Ausf.G with the 30mm Zusatzpanzer, antenna deflector, spare road wheel storage bin and spare track brackets on the glacis. The dark grey heat resistant primer on the gun barrel is also evident.



This Pz.Kpfw.IV Ausf.F2 still has the visor in the right side of the front plate that was to have been deleted in April 1942 although it appears that the turret side visors have not been installed. In May 1942, 8 of the 85 Pz.Kpfw.IV Ausf.F2 produced were fitted with Zusatzpanzer with a further 16 of the 72 produced in June. The significance of the cross painted in the center of the front plate is not known.



Starting in April 1943, first turret and then hull Schürzen, began to be installed on the Pz.Kpfw.IV Ausf.G as protection against Russian anti-tank rifles. A mine damaged suspension unit with shattered leaf springs can be seen on the glacis. This winter white washed example from Pz.Gren.Div. 'Feldherrnhalle' is fitted with the wide 'Winterkette' tracks and was photographed in the winter of 1943-44 in Russia.



Several brand new Pz.Kpfw.IV Ausf.G entrained on their way to the front were photographed from a passing troop train. The reinforced commander's cupola with the one piece hatch was introduced in February 1943 around the same time as the elimination of the driver's periscope as can be seen on this example. Starting in September 1942 the single Notek driving lamp on the left fender was replaced with two Bosch lights with blackout covers.

A column of Bulgarian Pz.Kpfw.IV's driving through Sofia in the spring of 1944. From February 1943 to July 1944, the Bulgarian Army received 91 Pz.Kpfw.IV Ausf.G and H from Germany. The lead vehicle is an early Ausf.H fitted with 30mm Zusatzpanzer on the front of the hull and superstructure. In addition to the turret Schürzen, they have been equipped with an engine air filter system called Filzbalgfilter consisting of two cylinders mounted on the right fender. This feature was dropped from production in February 1944.



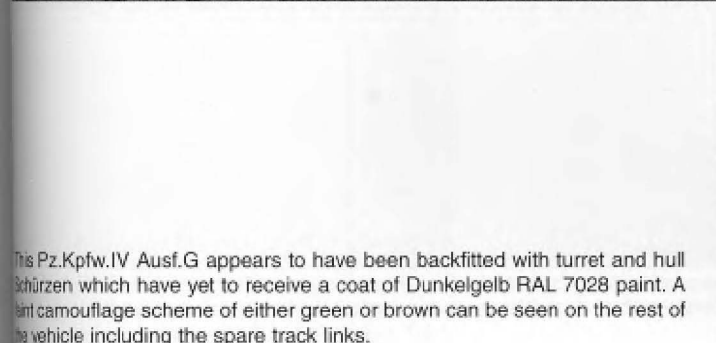
A column of Pz.Kpfw.IV Ausf.G that have been fitted with a complete set of turret and hull Schürzen advancing down a dirt road in Russia in the early summer of 1943. The new cupola with the one-piece hatch can clearly be seen on the nearest vehicle. Normally, the hatch was hinged on the left side but this tank commander has adjusted his to hinge at the back. The Filzbalgfilter on the next vehicle can be seen between the hull and Schürzen.



The early style of hull Schürzen was attached using hooks welded to a steel angle frame that ran down the side of the hull with additional hooks bolted to the fenders. Holes were cut into the plates for the hooks to go through. This arrangement often resulted in damage or loss of the skirts when snagged on brush and was changed to a saw-toothed early during production of the Ausf.H. A shipping stencil can be seen painted on the Schürzen just in front of the white outline Balkenkreuz.



Three totally destroyed Pz.Kpfw.IV Ausf.G somewhere on the Russian Front during the summer of 1943. The one-piece cupola hatch has also been adjusted to hinge at the rear on the center vehicle.



This Pz.Kpfw.IV Ausf.G appears to have been backfitted with turret and hull Schürzen which have yet to receive a coat of Dunkelgelb RAL 7028 paint. A paint camouflage scheme of either green or brown can be seen on the rest of the vehicle including the spare track links.





The steel angle that supported the hull Schürzen can be seen in this photo of a Pz.Kpfw.IV Ausf.G that has also been fitted with the 7.5cm KwK L/48 gun, also introduced in April 1943. The Schürzen plates themselves have been stacked on top of the turret, probably for rail transport. The camouflage paint scheme has been painted on the inside of the turret Schürzen access doors.



Beginning in September 1943, Zimmerit anti-magnetic mine paste began to be applied to the Pz.Kpfw.IV Ausf.H including this one from 5./SS-Pz.Rgt.12 from the 12.SS-Panzer-Division seen here in Normandy. Initially, Zimmerit was applied to the hull as well as the turret and hull Schürzen plates but was soon applied only to the vehicle itself.



Another example of an early Pz.Kpfw.IV Ausf.H with Zimmerit applied to the turret Schürzen. The later style of hull Schürzen support angle has been fitted to this vehicle which had triangular teeth welded to it and modified hooks mounted to the fenders which engaged brackets welded to the inside face of the plates. The crewman at the back of the tank is using the track wrench to adjust the track tension. The three dark strips on the underside of the hinged mudguard were caused by the track cleats throwing up dirt and sand particles which have removed the paint.



A Pz.Kpfw.IV Ausf.H burns furiously during the winter of 1943-44 somewhere on the Russian Front. A new cast drive sprocket and reinforced final drive housing was introduced on Ausf.H production starting in April 1943. The early style road wheel hubs and rubber tired return rollers identify this vehicle as being produced sometime before September 1943.



An American paratrooper inspects this Pz.Kpfw.IV Ausf.H produced sometime around October 1943 as it is fitted with the steel return rollers introduced at that time but still has the earlier style of road wheel hub caps that were replaced with forged hub caps starting in September. The two 'C' tow hooks that replaced the 'S' tow hooks can be seen mounted on the left fender. The antenna mount was relocated to the left rear of the hull starting in May 1943 and also appeared on some late production Ausf.G as well. The writing on the turret Schürzen seems to read in part '7/4/44' and 'St.Lo' with two digits of the tactical number, two 1's, visible underneath. This would indicate that this Pz.Kpfw.IV belonged to Panzer-Lehr-Division which fought in this area.



An early Pz.Kpfw.IV Ausf.H from Pz.Rgt.35 of the 4.Panzer-Division in Russia during the summer of 1944. The hull and turret Schürzen have been covered with a field workshop applied coat of Zimmerit with a unique herringbone pattern. It is fitted with the wider 'Ostkette' tracks that were issued only to units on the Eastern Front in May 1944.

The crew of this Pz.Kpfw.IV Ausf.J has added a row of T-34 track links to the side of the hull to improve armor protection. The forward facing shovel mounted on the side of the engine deck is an indication that this is an Ausf.J. The vehicle is also fitted with steel return rollers and forged hub caps on the road wheels. Note as well the relocated vehicle jack.



This derelict Pz.Kpfw.IV Ausf.H displays some of the features of a vehicle produced after September 1943 including steel return rollers and forged hub caps on the road wheels and welded bump stops. The driver's and radio operator's side visors were dropped in June 1943. Sometime in late 1943, the bullet splash rails around the driver's and radio operator's hatches were simplified and welded to the superstructure roof with squared off corners. A steel rod was welded to the top of the front plate as a hatch stop in place of the rubber bumper previously fixed to the front splash rail.



This Pz.Kpfw.IV Ausf.H or J is being used to ferry wounded soldiers to a rear area. It has a coat of Zimmerit and the later style forged hub caps can be seen on the road wheels. The general condition and the fact it still has a full set of hull Schürzen indicates it has not seen much action.



A well camouflaged Pz.Kpfw.IV Ausf.H or J from II./Pz.Rgt.35 of the 4.Panzer-Division seen on the Eastern Front in 1944. The division's shield and regimental standing bear emblems can be seen painted on the turret Schürzen along with the tactical number '611' painted in white.



A group of American soldiers inspect what appears to be a relatively intact Pz.Kpfw.IV Ausf.J. The vehicle has a mixture of hub caps on the road wheels with at least one early style mounted on the front road wheel.



A new Pz.Kpfw.IV Ausf.H, probably seen in the late fall of 1943. It has a complete set of turret and hull Schürzen mounted on the later style angle rail with the triangular teeth but the second plate appears to have the holes in it for the first style of rail.



Another Pz.Kpfw.IV Ausf.H from the same unit displaying a complete set of early hull Schürzen modified to fit the new rail system.



The turret traverse motor was eliminated at the beginning of production of the Pz.Kpfw.IV Ausf.J in February 1944 and with it the small muffler that had been located on the rear plate to the left of the main engine muffler. The visors and pistol ports in the turret side hatches were also ordered to be dropped in May 1944 but quantities of existing stocks meant that they would continue to be seen along with plain hatches until the end of the war. This vehicle is also fitted with the cast idler wheel that was introduced on the Ausf.H in October 1943 but did not completely replace the welded tubular idler.



The battered and burnt out remains of a Pz.Kpfw.IV Ausf.J are inspected by a couple of American soldiers who were driving by in their Jeep. Just to the left of the turret ventilator, one of the three Pilze sockets that were welded to the roof for mounting a 2 ton jib can be seen.



Three Russian soldiers stroll indifferently past a knocked out Pz.Kpfw.IV Ausf.H or J. As can be seen between the two soldiers on the right, the complete engine deck has been blown off in an explosion. Notable features are the steel return rollers and forged hub caps on the road wheels. The sign nailed to the tree has the divisional emblem of 5.SS-Panzer-Division 'Wiking' painted near the front with the words 'VeKl Lager' indicating that the photo was probably taken in Hungary or Czechoslovakia.



An American soldier poses for a photograph on an abandoned late production Pz.Kpfw.IV Ausf.J. In August 1944, the horizontal muffler was converted to two vertical cylindrical 'Flammentöter' exhaust pipes designed to suppress the glow from the hot exhaust pipes at night. In December, a reinforced tow coupling was welded to the rear of the hull for use with tow bars. As on the Panther and Tiger II, poison gas detection panels were added to three locations on the turret, one on top of the recuperator housing in front of the mantlet and two on the back quarters of the turret Schürzen. The long shadow pointing down from below the cupola is created by one of the brackets. Along the top edge of the rear engine deck plate are three small hooks used to hang spare track links.

This late production Pz.Kpfw.IV Ausf.J is fitted with the final design hull Schürzen consisting of a heavy gauge woven wire mesh suspended on a steel pole instead of an angle that was introduced in September 1944 at the same time that the application of Zimmerit was discontinued. A pivoting cupola hatch was introduced in October and in December 1944, the number of return rollers was reduced to three per side. The forged hub caps for the road wheels and welded bump stops can also be seen in this photo.



Another view of the same Pz.Kpfw.IV Ausf.J seen from the right side and showing the vertical 'Flammentöter' exhaust pipes and heavy gauge woven wire mesh hull Schürzen. The American soldier is now standing in the commander's cupola and the pivoting hatch can now be seen in front of him.





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